

# EDEN 2007 ANNUAL CONFERENCE

## New Learning 2.0?

Emerging digital territories  
Developing continuities  
New divides

EDEN 2007 Annual Conference

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Edited by

András Szűcs and Ingeborg Bø  
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## Wanted: Realistic Futurists and Progressive Practitioners

The rush is on: the rapid evolution and widespread penetration of new media and technologies, emerging new tools and solutions constantly change and challenge the ways and means of accessing and sharing knowledge. The educational landscape is now also alive with catchwords about the "hot technology tools", the Web 2.0, aggregators, the Social Web, collaborative content creation, writing and bookmarking, etc. The road for the "nomadic learners" on the web is paved by *online knowledge communities – social tagging – folksonomies – inquiry learning – ubiquity– digital learning games*, etc.

A growing pressure persists to improve ICT uptake in support of the European strategy to become a powerful knowledge economy, to help the development for growth and jobs. The importance of workplace learning, non-formal and informal learning is increasing, influencing more and more the culture of learning. Quality – recognition – assessment – accreditation, together with competences, remain core issues in the light of the coming European Qualification Framework and the EU Lifelong Learning Programme starting in 2007.

The critical voices are however also present. "E-learning is not a shortcut to happiness" – "Don't trust e-learning – as it is now"... The usability of e-learning is questioned, ICTs are criticised for not meeting the requirements of the future, rather serving the learning needs of the past.

It is apparent that it will take quite more time to learn how to use the e-learning technologies properly, to change learning paradigms to benefit fully from the possibilities offered by ICTs. But all in all: is e-learning really transformative? Whilst it is often stated that new technology solutions require new pedagogical approaches and organisational structures, no radical de-institutionalisation seems to occur, as it was earlier predicted. A gap exists between concepts and visions on e-learning and the real impact of the new technologies on mainstream education and the training process. Looking critically at the vision for e-learning seems to be a responsible response once again.

E-learning is evolving, like is the world around us. The relationship between learning, working and the rest of life is also subject of profound changes. The quest for a long term e-learning model and the concern of e-learning as distinct field being "dissolved" by the limitless penetration of ICT in everyday life are present in parallel. Successes are vulnerable because of the never-ending paradigm shifts. Reaching the point of critical mass with convincing examples and practices should help to consolidate the professional knowledge. There is an ever stronger need for the validation of the visions, for the conceptualisation of the results available, for the credible "demonstrations of the possible".

The need for a transversal, holistic approach is strengthening, in the meantime, a kind of cycle in the innovation process seems to have come to an end. We can expect a new wave of ambitious initiatives to come. The traditional educational systems and settings are changing slowly. Together with visionaries and the socio-technical forerunners, important role remains with the progressive practitioners, who investigate, develop, experiment with new solutions and deliver proofs of good practice in e-learning.

Whilst many researchers anticipate quick the transformative impact of the social web and the consequent radical conversion in the world of learning, quite a few successful practices seem to show consolidation along the well known open and distance learning methods and principles. Several professionals argue that successful and acknowledged e-learning practice in most cases has a lot to do with well designed and implemented distance learning in contemporary technology environments.

The present transformations are accompanied by the emergence of "new digital territories" – as well as the web: geopolitical, social spaces, academic and subject territories, different fields of e-learning and training. They may generate or facilitate both continuities, or on the contrary, divides of several kinds, between what has traditionally been well demarcated and what should not be divided.

The EDEN Annual Conference in 2007 in Naples welcomes the European professional and academic community of e-learning, open and distance education. It is a great pleasure to see that EDEN has again attracted the leading thinkers, practitioners and their valuable contributions at this most important conference. We thank for the many excellent submissions received: the main value is the wealth of knowledge gathered, the professional climate the competence and interest of the delegates attending. EDEN will continue its efforts to contribute to the development and successful integration of knowledge in the field ICTs, open, distance and e-learning.

Ingeborg Bo and Andras Szucs

## Acknowledgement and thanks are given to the Programme Committee

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# A NARRATIVE FOLKSONOMY PARADIGM SUPPORTING ONTOLOGIES CREATION WITHIN EDUCATIONAL COMMUNITIES OF PRACTICE

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## The EduOntoWiki project

The importance of ontologies for the Semantic Web paradigm has been recognized in education (Aroyo, 2004) (Koper, 2004) (Galliani, Petrucco & Dal Bon, 2004). But the potential of these formal semantic structures has not yet been fully explored and discussed within a real social and pedagogical context. We can think the use of an ontology in a learning process in many ways: such as a mean to improve learning resources search providing a richer framework for the expression of learning object metadata (Sicilia & Garcia, 2005) (Gasevic & Hatala 2006), as a mean to describe the main elements of the learning design process (Amorim et al, 2006), or as a wire frame cognitive support to the contents and organization of a specific discipline. So, to be really useful, an ontology requires not only the active consensus of a committed community of practice in a knowledge domain (Domingue, 1998), but also that the people involved in the creation and maintenance be a wider community and not only a small group of experts. If it were possible to have an "ontological" reference model which shared lexis and semantics, as regards both terms and their relations, this would probably help to reduce the conflicts that arise from misunderstandings and incomprehension. As the name suggests, the project uses a Wiki software where user can construct, discuss, and contextualise ontologies suitable for describing the *actors*, *processes* and *technologies* of educational sciences. The project takes in account the state of the art of educational research in Italy, and in other European countries such as France, Spain, Germany and England. The three thematic areas studied, at least in the first step of the project, are: *didactic planning*, *educational communication*, *assessment* and *evaluation*.

## Integrating Ontology and Folksonomies through narrative

When planning the project, we were aware that defining ontologies in the field of education was no simple task, above all because of the difficulty in formally conceptualising a domain which has always played on the idiosyncratic interpretation of each philosophical/pedagogical approach. Since an ontology *is* a community contract, it must be a *dynamic* process, able to reflect consensus at any point in time and in many situated contexts. We needed a new approach that would take care of this problem and we found it in folksonomies (Vander Wal, 2005) and the *social software* paradigm. The ontologies concepts are now "negotiated" in working exchanges and dialogical moments integrated with *narrative* and *social tagging* processes (i.e. folksonomies) in order to make explicit the multiple contexts where they are found. In this sense we invite users to create specific "instances" linked to concepts in the ontologies, intended as a *narration* of personal and contextual experiences situated in a precise space, time and place. Each story can have one or more *tag* associated so this process of *narrative conceptualisation* can lead from the formulation of "descriptive instances" to spontaneous formalization of "normative instances", i.e. new ontology concepts. In this way semantics can *emerge* (Aberer, 2004) spontaneously as bottom-up semantics that evolve over time and among people, in the real world. Instead of forcing users to adapt to the ontology, the folksonomy can *mediate* the ontology to the users (Mote, 2004). Our integration of *ontologies* and *folksonomies* can offer multiple perspectives on concepts, making it possible to highlight not only the default hierarchical knowledge structure, but the link structure that connects the concepts with similar tags. This approach has the added benefit that users have a strong motivation to participate and constantly keep in touch with each other because they perceive their life experience as contributing to the construction of community knowledge. The multiple life contexts become therefore precious alternative representations, effectively expressed by the learning subjects by means of a narrative description (Bruner, 1996), that a rigid ontology formalization would, on the contrary, risk penalizing. Given these assumptions, combining the Semantic Web applications with Social Software was a natural choice for our EduOntoWiki project: it can now support the creation of semantically and socially *enriched content* using a simple interface and allowing domain experts, novices, teacher and students to collaborate, sharing their true life experiences: so, we can regard our system as a flexible *folktology* social environment, a living structure that it is developed, managed, and discussed by committed communities and will have the ease of a folksonomy combined with the semantic richness of a formal structured ontology.

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# PERSONAL LEARNING ENVIRONMENTS, INSTRUCTIONAL ENVIRONMENTS AND COMMUNITIES OF PRACTICE: HOW TO DIFFERENTIATE AND CONNECT THE DIFFERENT THEORETICAL APPROACHES TO CREATE A LEARNING MODEL

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The theoretical debate on e-learning covers both theoretical and technological perspectives, apparently independent from each other, and the research paths, born in different areas, that are not communicating with each other.

In the most significant practices, identified by the number of students or key institutions, the learning paths require a strong synergy between the different perspectives. The need arises to build a flexible and articulated design model that could avoid the theoretical reduction or cancellation of differences to allow dialogue between the different learning strategies and theoretical approaches. An effective learning path collects data from areas that are different by technologies, strategies and didactical approaches in a coherent framework.

For many years, the review of e-learning theories has led to the comparison of two main approaches: an approach born from a socio-constructivist paradigm, focused on the interaction in the virtual classroom and on situated learning and an instructional approach based on the delivery of materials.

Moreover, more recently, two learning paths seem to compete: formal education and environments aimed to share practices and individual experiences that are closer to informal education.

A border exists also between e-learning and knowledge management; e-learning has pedagogical-didactical components, while knowledge management has its informatics-engineering features. The two sectors develop (often without communicating with each other) research on the same topics: tools for communities of practice, text analysis, the creation of tools useful for sharing and producing information. More than ever, it brings to our attention the need to understand the peculiarities and the interactions between different learning paths. Taking our blinders off, we need to identify holistic approaches that do not deny the specificity of each single research, but can connect them to each other in a meaningful way.

The objective of the article is the development of a complex and integrated model that will be able to structure and let different technologies and models interact with each other, being well aware of the limitations, of the potentials and of the application fields of each of the components. Such a model should provide the ability to adapt technologies to the learning strategies and to relate these strategies to the correspondent technologies, but should also be able to suggest common spaces for planning and projects.

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## MOBILE LEARNING = DISTANCE EDUCATION 2.0?

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*Tom Brown, Midrand Graduate Institute, Rhena Delpont, University of Pretoria, South Africa*

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During recent years, many distance teaching as well as residential institutions have started to experiment with mobile learning through pilot projects as part of their e-learning and technology enhanced learning environments. Because of the similar affordances of distance learning technologies and online and mobile learning, the established field of distance education can provide valuable insight into strategies, approaches and practical experiences with regard to the conception and organization of this new medium for learning. Distance teaching institutions have a long history and much experience with media-based instruction. This affords them an advantage in the development and application of new information and communication technologies (ICTs) for teaching and learning. Student support systems have existed in traditional distance education for decades. ICTs – especially mobile devices – open up new paths for learning support and opportunities to reach a wider audience for (higher) education. However, will mobile learning bring about a paradigm shift in distance education? Or is it perhaps a new generation of distance education? Does it afford new opportunities for teaching and learning in terms of access and flexibility?

In order to address these open questions, the authors conducted an international survey amongst distance educators. The questionnaire was distributed by Carl von Ossietzky University of Oldenburg (Center for Distance Education) in cooperation with HfB - Business School of Finance & Management (Frankfurt) in Germany and the University of Pretoria – Department for Education Innovation (South Africa). The following themes were investigated:

- mobile learning and teaching experience of distance educators,
- the development and growth of mobile learning,
- the impact of mobile technologies on teaching and learning,
- mobile learning applications and mobile learning activities,
- mobile learning and access to (higher) education.

The survey was distributed via professional distance education networks like the European Distance and E-Learning Network (EDEN), the South African Institute for Distance Education (SAIDE), and the Canadian Association for Distance Education (CADE). It was also sent to faculty and alumni of the Master of Distance Education programme at the University of Maryland University College (UMUC) in the U.S. Within two months the authors received 88 responses from 27 countries.

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## EDUCATIONAL BLOGGING – IN SEARCH OF A GENERAL TAXONOMY

*Tom Wambeke, KATHO, Bieke Schreurs, Avnet K.U. Leuven, Belgium*

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### **Exploration of educational blogging through a blog matrix classification**

Although the use of the word blog or weblog in media is very popular since it was elected as 'word of the year' in 2004 in Myriam Webster Dictionary, the widespread active use of blogs is a different story at this moment when we look at the general statistics. Nevertheless, we can assume that the blogging trend will grow if it takes the same pace of the last years. Blogs are proliferating at an exponential rate. Estimates suggest that as many as 50 million people are now blogging worldwide, mainly because blogs are easy to create and modify (Educause, 2005). Technorati, a website mapping the blogosphere, is currently (January 2007) tracking more than 60 million blogs worldwide. We can conclude that the mainstream know what weblogs are, though these weblogs are still not fully integrated in an active way among the general population of internet users, and are even less integrated when we focus on 'educational blogging'.

When we look at the architecture of a weblog there is a widespread range of characteristics which create an added value; simplicity, high accessibility, an inexpensive nature, interactivity, dynamics, action-reaction (feedback), communication, networking, social interaction, peer review, high capacity of storage, knowledge management and knowledge construction, rich media, wide audience, no technical expertise required, easy content entry, personal touch, bottom up, ... Thanks to these characteristics, the use of this new social software application is growing exponentially within the higher education area. The downside of the exponential growth is the difficulty to include this new technology within the established structures of the higher education institutional area.

In the scope of this paper we would like to explore a general educational classification of weblogs. This is not a general classification on blogs (by media type, by devise, by genre) but rather an immediate focus on the educational applications. The aim of the paper is to have the readers think about the different possibilities of using weblogs and trying to use the model to categorize their educational activities. This classification will help them to integrate educational blogging in the broader pedagogical/didactical framework of their educational institution. The inspirational source is the blog matrix of Edtechpost.

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# TEACHING WITH SOCIAL BOOKMARKING: DATA AND LESSONS FROM EARLY EXPERIENCES OF SOCIAL BOOKMARKING INTEGRATED WITH AN ONLINE COURSE ENVIRONMENT

*John Morrison, Blackboard Inc., Deborah Everhart, Georgetown University, USA*

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There is a lack of literature on social bookmarking and education. Literature that does exist is introductory, critical from a library sciences perspective or is focusing on integrating user tagging and folksonomies with existing taxonomic based systems, again from a library sciences perspective. There is little data, to date, on the use of social bookmarking in education. This presentation will present some early data and point to projects which are starting to look at this issue. Early data suggests some similarities with existing studies looking at social bookmarking outside of Education e.g. (Golder and Huberman, 2006)

Similarly, there is a lack of pedagogical data from instructors who have used social bookmarking with an online course offering. Faculty need practical examples and strategies to initiate social bookmarking activities. Case studies demonstrate how this has been accomplished with students. This paper will report on some early experiences on the use of social bookmarking with an undergraduate literature class and provide an overview of the early experiences of other faculty.

The paper will expose mistakes made and pitfalls encountered as well as successes, with specific recommendations for helping faculty avoid stumbling blocks as they adopt social bookmarking in their teaching.

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GOLDER, S.A. and HUBERMAN, B.A. (2006) Usage patterns of collaborative tagging systems. *Journal of Information Science*, v32(2), 198-208.

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# SOMETHING WIKI THIS WAY COMETH: EVALUATING OPEN ARCHITECTURE SOFTWARE AS SUPPORT FOR NOMADIC LEARNING

*Steve Wheeler, University of Plymouth, UK*

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The use of social software in formalised learning contexts is nascent and largely untested. Such 'unmanaged learning environments' may have no formalised place in university settings, but for the growing number of students who engage in nomadic forms of learning, social software and Web 2.0 applications are the fertile terrain within which communities of practice will coalesce. This paper explores the potential for Wiki type open architecture software to promote and support mobile and location independent students. Benefits and limitations of the use of Wikis are outlined and the notion of nomadic learning is explored. The paper concludes with recommendations about how Wikis and other social software applications can be used to promote creative and collaborative virtual learning environments.

## Funnel and Webs

Arguing from a deconstructionist perspective on the future of education, Ivan Illich famously pronounced that an 'education web' approach should replace traditional schools. In an ideal web, itinerant scholars travel beyond the boundaries of traditional schools to share their expertise, and create new knowledge:

*'The current search for new educational funnels must be reversed into the search for their institutional inverse: educational webs which heighten the opportunity for each one to transform each moment of his living into one of learning, sharing, and caring.'* (Illich, 1970, p 2)

Illich's 'deschooling' thesis was intensely criticised, not solely because it was overtly anarchistic, but also for more pragmatic reasons. At its time of publication, with information technology in its infancy, any notion of an 'educational web' was deemed to be not only impractical, but unattainable. Illich's ideas presaged the Web by several years, and it is arguably only now, with the advent of the second, sociable incarnation of the Web (Web 2.0) and the profusion of pervasive mobile, wireless communication technologies, that we are witnessing the supplanting of Illich's 'funnels' with the informal 'webs' of itinerant students. Funnels are unidirectional, whereas webs grow exponentially in any and all directions their users choose to take. With the use of hypermedia, learning is mirroring the structure of the human brain, taking on an infinite number of rhizomatic forms (Deleuze & Guattari, 1987). Further, the idealism of 'personalisation' may actually be realised for many students who choose to travel learning pathways of their own construction within digital spaces. Clearly, 'schools without walls' are swiftly assuming reality and the nomadic learner is fast becoming a key player in the new digital pedagogy.

## Nomadic Learning

Nomadic wanderings in digital worlds are rarely solitary activities. Students may develop their own knowledge content with alacrity using a number of freely available software applications, yet ostensibly they will seldom be alone within the architecture of participation known as Web 2.0 (Boulos, Maramba & Wheeler, 2006). Web 2.0 software such as weblogging, social tagging, picture and file sharing, and of course the increasingly popular freely editable Wiki, are providing students unprecedented learning opportunities. Students across the globe are able to 'swarm together' (Rheingold, 2003), coalescing within rich and dynamic social environments, rather than wandering aimlessly through a socially 'cold' digital wasteland. This paper delineates some of the affordances and constraints of Wiki software as an open architecture that facilitates user collaboratively generated knowledge and community focused enquiry. It seeks to promote debate in this key area of development, and highlights some recent key contributions to the developing discourse on social software and what has been termed 'the architecture of participation'.

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# SOCIAL NETWORKS FOR LEARNING: WIKIS, BLOGS AND TAGGING IN EDUCATION<sup>1</sup>

*M. Antonia Huertas, Carlos Casado, César Córcoles, Enric Mor, Ana-Elena Guerrero-Roldán  
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## Introduction: technological and pedagogical context

On the one hand, fast developments in information and communications technologies and changes in the behaviour of learners demand educational institutions (especially higher education ones) to continuously evaluate their pedagogical and technological approaches to the learning and teaching process, both in face-to-face and virtual classrooms. Within this context the next generation technologies known under the “web 2.0” name are considered as an opportunity for innovation in teaching and learning.

On the other hand, briefly reviewing the theories of the pedagogical models behind traditional learning systems in chronological order, an evolutionary path can be established, that would lead us to the next stage: e-learning 2.0. These theories, however, were developed before learning was impacted by ICT technologies. For the present situation Siemens et al. (2005) propose a new theory, “connectivism”.

The connection between these two facets or contexts of the same emergence process (connectivism and web 2.0) is the learning 2.0 paradigm. Some of its key principles are:

- Learner-centered design: the learner constructs her own knowledge.
- Teachers and learners as peers within a social network.
- From traditional learning applications to open learning environments.

## Some learning 2.0 projects, practices and experiences at the Universitat Oberta de Catalunya

The 2.0 resources and rich applications offer the web as the platform where rich resources can be used. Currently there is a very extensive list of applications 2.0 suited to be used in education and hundreds of web 2.0 projects can be found on the web. Among them we especially consider blogging and wiki tools and systems of social bookmarking.

Blogging tools can be used to publish and to manage a repository of materials, to link to web content and exercises, both synchronously and asynchronously, to stimulate further reading on the discussed subjects, to organize in class discussions and collaborative works, building a scientific community in the process, or to organize class seminars. The content manager tool named wiki allows the collaborative creation of contents on the web. The best known example of their use is the creation of the Wikipedia. Pedagogically wikis can be used to create and to maintain repositories of information for the use of students, but their most revolutionary use is that the students themselves create the repository. Systems of social bookmarking were kick-started by the advent of del.icio.us. The social component comes from allowing subscription to other pages and to tags, or access to the aggregated behaviour of users. These systems have powerful pedagogical applications, such as information discovery and sharing, or social network building for workgroups.

Some of these experiences and projects have been also carried out at the Universitat Oberta de Catalunya, an exclusively online university. We present the case of the use of blogs for educational purposes in the final project of the Multimedia Graduate degree, where the experience was positive although it could be improved. We also present new learning 2.0 experiences designed for the next semester where students should use a social bookmarking tool to tag the found resources and another complementary tool to allow comments about the different tagged resources, their evaluation and their use. This second tool would be a Wiki or similar. The objectives of that pilot test are to analyze the different available tools for the task and to use it with the purpose of working collaboratively in a subject or area.

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## PEDAGOGICAL MODELS FOR PODCASTS IN HIGHER EDUCATION

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Podcasting is a new technology that is increasingly capturing the attention and imagination of practitioners from all areas of education. Wider penetration of broadband internet access, freely available software on the internet to create digital sound and video files, and increased ownership of MP3 players all work in favour of the popularity of podcasts. The adoption of Web2.0 applications – applications, tools and services that enable users to capture, generate and share content and form online communities – has also contributed to the popularity of podcasts. However, research into students' experience of podcasting is understandably in its very early stages. Effects of podcasting on student learning in higher education are yet to be examined.

This paper reports work-in-progress of a UK national study called IMPALA (Informal Mobile Podcasting and Learning Adaptation) investigating the impact of podcasting on student learning in higher education. Through a cross disciplinary and cross institutional study, IMPALA will deliver transferable pedagogical models of podcasting, for distance and campus-based learning, mediated by VLEs.

The research, funded by the UK Higher Education Academy, is being carried out in five UK universities (Leicester, Nottingham, Kingston, Gloucestershire and Royal Veterinary College) across a range disciplines: Chemistry, Engineering, English Language, Human Geography, Physical Geography, Genetics, Media and Communication, Physics, Sociology and Veterinary Sciences. The project implementation consists of a pilot study, pedagogical design and development of discipline-specific podcast applications in two semesters, researching students' learning experience during two semesters, and dissemination of project outcomes.

Evidence from the pilot study, presented in the full paper, shows that podcasts were helpful for students who were carrying out much of their studies online. Podcasts supported organisational aspects of learning, brought an informality and fun to formal learning, developed students e-learning and independent study skills, enabled a deep engagement with learning material, and helped them to learn while being mobile. Listening to educational material as a podcast is different from listening for entertainment; therefore, podcasts must be integrated with other learning activities, such as online discussions.

The paper also presents an overview of the range of podcast models developed by IMPALA partners to address specific challenges in teaching and learning, exploring podcasts as a learning technology. These include using podcasts:

- to support online learning and to integrate other e-learning activities - a 'profcast' model
- as a strategy for teaching large student cohorts requiring support for practical-based learning
- to bring topical issues and informal content into the formal curriculum
- to develop reflective and active learning skills
- to develop students' study skills during the first year at the university
- to enhance student learning in location-based studies
- as extensions to lectures: summaries, additional learning resources, further reading and research

Evidence so far suggests that podcasts can be a valuable tool in the practitioner's e- and distance learning toolbox.

Visit the project blog at <http://www2.le.ac.uk/projects/impala/> to find more on IMPALA models and data analysis.

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# COLLABORATIVE LEARNING IN A WIKI ENVIRONMENT: CASE STUDY OF A REQUIREMENTS ENGINEERING COURSE

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## Using wikis to facilitate Web-based Learning Communities

As interest in Web 2.0 has picked up in the last couple of years, social software tools such as blogs (Weblogs), wikis, podcasts, and photo or bookmark sharing systems such as Flickr and del.icio.us have become popular. Sites such as YouTube, Myspace and Facebook are part of a growing trend towards creating content and sharing information and ideas via online communities and social networks. Organisations are using blogs and wikis in conjunction with existing collaborative tools such as email lists, discussion forums, websites and web portals to facilitate information sharing, knowledge creation, knowledge management, marketing and to foster collaboration within the organisation and with partnering organisations.

Educators are also realising the potential of blogs and wikis in learning and teaching: for example, blogs are being applied for facilitating reflective learning and communication, and wikis for collaborative authoring. Although, blogs are traditionally the creation and representation of one author's views, group blogs, maintained by two or more bloggers on a project are also common. Many e-learning and face-to-face courses use blogs as part of course assignments or on group-projects. The most popular use of blogs in courses is that of student journals where they can express themselves, record their thoughts, ideas, course readings or research. A group blog can enable brainstorming, discussion, group meetings and project management. Wikis are considered as a more 'formal' way to synthesise the students' knowledge in a collaborative authoring project – for example, creating a glossary, or co-authoring a paper, or collaboratively writing an essay or a project report. As a result of several contributors adding material to the wiki, a wiki can grow and evolve and, therefore, can address pedagogical objectives such as student involvement, group activity, peer and tutor review, knowledge-sharing and knowledge creation.

The UK Open University (OU) has embarked on an €7.5 m programme to develop an integrated virtual learning environment (VLE) to meet the online learning needs of its 200,000 distance learners. The open source VLE, Moodle has been adopted by the University and is now undergoing extensive development to provide the required functionality. Adoption of blogs, wikis and podcasting are beginning to transform the way that learning is developed by course teams and supported by over 7,000 associate lecturers (or tutors).

The course team of a postgraduate course, Software Requirements for Business Systems, in the Department of Computing of the OU has been one of the early adopters of the VLE. The course involves teaching systematic elicitation, recording, and communication of requirements of software systems. On a software development project, the elicitation of requirements is generally carried out by a team of requirements engineers or system analysts. In software enterprises, requirements engineers often work remotely from one another and wikis are increasingly being used for collaboratively developing requirements specification documents. In the current presentation (November 2006 - April 2007) of the requirements engineering (RE) course, we (the course team) have introduced activities based on wikis to provide students with the opportunity to engage in small group collaboration in order to emulate RE practice, thereby providing students with transferable skills for working with community tools in the industry. Further, we are hopeful that the wiki activities will help facilitate learning and acquisition of skills: creation of explicit knowledge from tacit understanding; learning through discussion, disagreement and consensus building; effective communication of ideas to others through networked knowledge environments; articulation, analysis and synthesis of ideas and knowledge-sharing.

In this paper, we discuss the community building potential of wikis and the role of wikis in software engineering projects and particularly in requirements development is highlighted. During the planning and implementation of wiki activities on the RE course at the OU, we have faced a number of social, technical, and pedagogical challenges. In this paper we discuss our experiences on the RE course. We identify research issues of employing wikis in pedagogical contexts that have emerged so far.

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# PROMOTING ENGAGEMENT AND MOTIVATION FOR DISTANCE LEARNERS THROUGH PODCASTING

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## Background and introduction

E-learning and blended approaches facilitate timely communication between students' peers, community and instructors, and provide resources to allow for independent learning. The use of podcasting technology, which allows audio content from user selected feeds to be automatically downloaded to one's computer as it becomes available, then later transferred to an MP3-capable portable player for listening at a convenient time and place, holds particular promise for the creation of learning settings that can interest and motivate learners and support their engagement, while at the same time addressing the motivational elements of effective learning.

This paper reports on an initiative in which off-campus students undertaking an information technology subject at Australia's largest distance education university listened to podcasts created by another group of volunteer students. The podcasts themselves are structured as talkback radio-style segments comprising dialogues/discussions hosted by one or more of the volunteer students on pertinent issues related to the subject and its content in a relaxed and informal style. The lecturer and/or other subject matter experts are occasionally brought in as "guests" to offer insight into, or clarification of, the more difficult or complex issues and topics. The material contained in the podcasts is supplementary in nature and not directly examinable, although it is designed to provide background material and expose listeners to terminology used in the subject, in addition to allaying their concerns about issues such as assessment, and "whetting their learning appetites" in relation to the subject content and learning activities.

## Methods and theoretical framework

The study analysed responses to mid-semester and end-of-semester surveys to investigate the uptake levels and motivational value of the podcasts from the distance education students' perspective. In particular, respondents were asked to answer a number of rating scale questions based on a 7-point Likert scale, that were directly linked to Pintrich & De Groot's (1990) three motivational components:

- An *expectancy* component: This includes students' beliefs about their ability to perform a task;
- A *value* component: This includes students' goals and beliefs about the importance of the task;
- An *affective* component: This includes students' emotional reactions to the task.

## Summary of results / findings

The uptake levels of the podcasts were excellent. In the end-of-semester survey, for example, 82% of respondents reported that they had listened to seven or more of the nine available podcasts from start to finish, and a majority reported that they had listened to at least three of the episodes multiple times. All but one respondent had downloaded at least seven of the podcasts.

In addition, in both surveys respondents were generally in strong agreement that the podcasts were of educational *value* to them, and that they were beneficial to their understanding of the subject content. Their responses spoke highly of the podcasts' entertainment value and social cachet, amongst other *affective* qualities. In terms of the *expectancy* component, the respondents largely had little or no difficulty obtaining and playing back the podcasts, and largely saw listening to the podcasts as a worthwhile activity that they would recommend to other students studying the subject. In addition to the above, a large number of respondents indicated that they would be interested in exploring the possibility of joining the team to produce podcast content for future cohorts. All in all, the authors believe that listening to the podcasts was useful in promoting engagement and enhancing motivation for the distance education students.

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## MODELS FOR ACTIVITIES, COLLABORATION AND ASSESSMENT IN WIKI IN ACADEMIC COURSES

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In the academic year 2005/2006, the Open University launched a pilot project for the integration of Wiki environments into course instruction. Teaching coordinators who expressed an interest in integrating Wiki into their courses were identified. Coordinators were given the freedom to design learning activities in the Wiki<sup>1</sup> environment based on their individual understanding and approach. In this paper, we present the models developed at the Open University in the courses of the pilot, and analyze the differences between the models and the nature of activities that took place in these courses.

In examining the first year of the pilot, four main models for Wiki integration, developed in various courses, can be identified: Wiki-glossary, Text analysis, Inquiry-based learning, Solutions to questions.

Three Wiki collaboration models emerged in the pilot: cooperation, collaboration and peer assessment.

One of the characteristics distinguishing the various activities developed in Wiki was the designation of an activity as mandatory, optional or enriching. The findings show that if the assignment is not mandatory, students will not choose to participate of their own free will.

The process of assessing student participation in Wiki requires advance planning because of the complexity of the activity, and must address both the content goals and the collaboration model defined by the teaching planner. Three axes can be identified, with each axis representing a continuum of an activity assessment component: group/individual assessment axis, product/process assessment axis and quantitative/qualitative assessment axis.

The way the assessment is defined influences on the dynamics which takes place during the assignment. For example: by generating a "User contributions" wiki report, it is possible to trace back all actions of individual participants and track their activities. Increased use of individual assessment, and ignoring group assessment, may create a situation in which an assignment intended to be collaborative will be perceived by the students as competitive. To prevent such a situation, measures of both individual and group assessment should be used in determining the final grade. Assessing the product quality is relatively simple and clear. The written text must be assessed as if it was written by one individual, using accepted methods for assessing individual assignments. Assessing a process is more complex, and must address issues such as: how the product was created, how many individuals were involved in creating the product and who are those individuals, what level of collaboration was between them, at what rate and in what sequence the product was created, etc. To increase collaboration, it is recommended to give weight to the process collaboration level in grading the assignment and to encourage students to edit texts created by other users.

Wiki offers the capability to generate reports that present the volume of activities according to various cross-sections (contents, dates and users) and to use them as the basis for quantitative assessment. Nonetheless, it is important to note that while the volume of activities in Wiki can give an indication of the level of activity in the website, this measure can sometimes be misleading and distort reality. Therefore qualitative measurement is very important as well.

Taking all these aspects of assessment in consideration we present at the end of the paper a rubric that serves as a template for helping the individual planning of a Wiki activity to define criteria for assessing a collaborative assignment.

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<sup>1</sup> Wiki is an Internet application that allows quick and simple creation of web pages. It enables co-editing the content by various participants, and supports tracking tools for analyzing and understanding the evolution of the content.

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## MOBILE LEARNING: CONTENT CREATION AND DELIVERY

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There is a wide range of devices available to today's students. In the traditional model, elearning students access course content on a PC via a number of web browsers. However, a large number of people are using mobile phones, smart phones, PDAs, and devices like the Blackberry and even portable games consoles with web browsing capabilities.

Students' expectation is that training content should be available to view on all of these devices, correctly formatted and fast to download. In this market, the traditional content development model will not suffice; a content developer now faces the scenario of having to develop for multiple devices and platforms – everything from the traditional OS / web browser combination to Symbian and Windows Mobile on smart phones, or J2ME content on mobile phones.

Ericsson uses Sumtotal's Learning Management System to store, schedule and support training delivery. In tandem it also employs a Learning Content Management System (LCMS) from Giunti Labs. The LCMS allows the user to create and author courses. The LCMS facilitates the collaboration of several different authors on any given course. In addition, the components that make up a course can be centralized and shared across multiple courses. This tool allows developers to bundle learning objects together to create a course; a learning object is defined as any training-related content stored in the system. For example, a learning object can be a single image depicting a network diagram, or could equally represent an entire module of a course.

SCORM is used to tag training content in the LCMS, regardless of content type. For example, an Instructor-led (ILT) course has associated slides and student text books that need to be tagged and stored. It is also used to structure metadata and modules for reuse.

The metadata that is applied to content must be highly structured and clearly laid out. For example, each content area is tagged, within that individual modules are tagged, and so on down to individual elements such as an assessment, diagram, audio file and so on.

Once courses are created in the LCMS, and deployed via the LMS, it is necessary to investigate the network architecture and tools available to the training provider to deliver the content to the student.

IP Multimedia System (IMS) is a telecoms architecture for delivering converged services (i.e. Voice and Graphics) over to a variety of devices, known as user agents, over an IP network. Examples of agents include broadband connected personal computers, WIFI enabled Personal Digital Assistants and mobile phones. User Agents (UA's) have applications built on top of them, for instance combinational voice and whiteboard or group collaboration services.

The IMS provides many functions that can add to a mLearning system. In this paper we focus on three main areas:

1. Converged service delivery.
2. Application and Content Delivery via the IMS.
3. The use of Presence and Availability for mLearning Applications.

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# COMBINING LEARNING AFFORDANCES IN CROSS PLATFORM LEARNING ENVIRONMENTS

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## Context

Until relatively recently, the key technological device involved in computer-based and e-learning was assumed to be a desktop PC, probably connected to the Internet. However, a plethora of new domestic and personal technologies now offers the educational technologist a wide range of platforms with which to engage the learner. Mobile devices and digital television are becoming increasingly established as plausible learning platforms, and soon no doubt will be joined by ambient, wearable and other technologies. Therefore a new challenge for those designing educational materials is to decide how different types of activity and material should be mapped onto these disparate devices, while at the same time maintaining for the learner a sense of coherence. In this paper we describe two projects that explore the possibilities opened up by multi-platform learning environments, concentrating on user requirements capture and design issues.

## Learning languages from iTV and mobile phones – the TAMALLE project

TAMALLE is a cross platform support system for high level learners of English as a second language, which integrates interactive TV and mobile phone functionality. Designed as an adjunct to formal learning rather than a replacement, TAMALLE assumes that the user will be interested primarily in the consumption of English language media, such as the news or a soap opera. The system's role is to support the comprehension process by offering discreet and non-intrusive support. This comes in the form of captions and other onscreen displays, for comprehension of specific linguistic and cultural items for viewers. When learners are in a more active mode, they can use a mobile phone to access these language items and their annotations, which they can save in their personal "learning sphere", a private data storage area accessible both via the TV and mobile phone. These learning objects can be accessed prior to, during and after the show. Viewers are also able to add, search for and remove learning objects from their personal spheres, in much the same way as they would use a paper vocabulary book. The TAMALLE prototype was developed using a scenario based user centred design process. It has been evaluated with learners and is now being further developed.

## Ubiquitous learning with PC, iTV and mobile devices: the LOGOS project

The LOGOS project takes the notion of cross-platform learning and expands it into a vision of ubiquitous on-demand learning across a wide range of topics and contexts<sup>1</sup>. It aims to develop a set of tools allowing authors to create learning materials based on repositories of multimedia material for display and interaction via PC, iTV, PDA and mobile phone. Prototypes will be developed for testing and evaluation based on a subset of scenarios, and a robust system will be evaluated in use during 2008-9. This will allow us to judge the efficacy and ease of use of the provision of cross platform support for displaying and interacting with a common set of learning materials and thence to develop more effective ways of taking advantage of the learning affordances of each platform.

## Conclusion

The projects outlined above are presented as experimental examples of the possibilities for delivering training and educational material in a cross-platform environment. They are in development through a user-centred approach involving the creation of detailed scenarios to bring out issues of context of use. No doubt further important issues will be discovered as these systems are subject to more extensive field trials. The developing experience and sophistication of end users as they are routinely exposed to learning material that migrates across the ubiquitous domestic electronic devices of daily life, together with the commercial possibilities that are enabled may have a profound effect on self-managed learning. These projects represent initial steps into this new world.

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<sup>1</sup> LOGOS (IST-4-027451) is funded under the EU 6<sup>th</sup> Framework. It involves 15 partners from eight countries.

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# FROM E-LEARNING TO THE ACQUIREMENT OF COMPETENCIES: WIKI-BASED KNOWLEDGE MANAGEMENT AND COMPLEX PROBLEM SOLVING

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## Acquirement of Competencies and Collaborative Knowledge Management

Societies all over the world are facing rapid social and technological changes. Economic and cultural globalization and technical progress are among the many facets of today's world (e.g. Rychen 2001). Therefore, academia needs to include specialised expert knowledge in problem-oriented, systematic and integrated processes and approaches, not only in research but also in teaching. For this purpose, academia first needs to create the necessary interdisciplinary research and teaching structures. Students have to be familiarised with the changeability of complex systems in order to be able to adequately perceive and understand society and its developments. Since such competencies cannot be "drummed into" the students, it is necessary to develop appropriate contents and forms of study which may facilitate such learning processes and promote the required competencies.

Furthermore, dealing with complex problems has an impact on the forms of knowledge required. Beside factual knowledge, the availability of both procedural knowledge and orientation knowledge is crucial. Procedural knowledge, as the knowledge of how to perform a determined task in a specific situation, is the strategic component; orientation knowledge additionally encompasses normative and motivational aspects. Taking all three kinds of knowledge into account helps to establish a connection between knowledge and the acquisition of competencies (Bechmann/Stehr 2000).

In facing the difficult challenges of re-adjusting the targets and objectives of higher education and developing new forms of study, appropriate forms of knowledge management must be considered and integrated. New learning tools from the 'Web 2.0', such as wikis and blogs, can be seen as one possible way to support the new learning strategies required. Additionally, to support the acquisition of competencies through concepts of collaborative knowledge management, the requirements of learning processes must be considered and a didactical design must be chosen which recognises the characteristics of knowledge management and offers possibilities of integrating tools to support it.

## Empirical Study

The present empirical study investigates the role of a wiki as a knowledge management tool in the acquisition of competencies. Special attention is paid to the question of how knowledge is gathered and organised in complex problem solving, and to the question of whether the ability to think in a cross-functional manner is enhanced in the process. Given the research question, at least three different aspects need to be considered if an adequate approach is to be taken: (1) the students' acceptance of the wiki, (2) the actual use of the wiki and (3) the specific characteristics of a wiki and the consequences for knowledge management.

The programme of study evaluated is an interdisciplinary seminar in higher education which is offered as an optional course for students of all disciplines. The course is offered as a 'blended-learning' seminar, designed for self-directed, problem-oriented and collaborative learning. The moodle-based e-learning platform offers a number of collaboration tools such as a wiki, different discussion forums and tools for file exchange.

## Results: Knowledge Management and the Acquisition of Competencies

The integration of a wiki system into the study programme as a tool for knowledge management could prove the usefulness of the wiki, especially in dealing with complex problems and for handling different forms of knowledge. The wiki supports the representation, use and communication of knowledge, and makes the development of knowledge and cross-linking transparent. Thus, some main characteristics of wiki-based knowledge management can be described.

Using a wiki for knowledge management particularly supports the acquisition of competencies by encouraging self-directed processes and enhancing reflection processes. The use of a wiki might be seen as one example of how new learning technologies, summarized as Web 2.0, could offer new possibilities for qualitative benefits in the process of acquiring competences in higher education.

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## GAME-BASED ENTREPRENEURSHIP EDUCATION

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### **The similarity of the e-learner, the game-player and the entrepreneur**

The social interactivity of applications (social software) in the so-called Web 2.0 and now also with 'E-learning 2.0' opens opportunities to the development of learning contexts in which specific forms of interactivity have already been implemented independently of these technical developments: i.e. in game-based education. This didactic field is also benefiting from the social interactivity of the learning process. In this respect a combination of game-based education and the simulative and ludic strand of new technologies gains theoretical interest.

A large variety of plays, games, and contests is being used for long times for instructional purposes – of course even before the advent of the computer. The ludic dimension generates motivation and satisfaction which is independent of a specific interest in learning. And the conscious integration of another human, i.e. another learner and not 'only' a teacher, establishes specific social obligations to participate in accordance with the rules of the game. Motivation is directed to activity and self-experience – learning is more or less a by-product.

There is a structural similarity between the didactical structure of games as a field of interaction steered by the learners themselves and the technological developments, which likewise promote self-motivated interactions in virtual worlds.

As a result motivational problems which were always a major obstacle in the development of e-learning can be better overcome – at least in certain learning contexts. The motivation problem of computer-based learning, which is partly due to its anonymity, is confronted in a double way by online learning games: on the one hand by its ludic aspects and on the other hand by the establishment of social relations based on interaction.

On such context, where this contiguity might work out, is entrepreneurship education because there is a further structural similarity in line with the one of interactivity of games and social software applications. In analogy to play the perception of real-world objects as options for new actions constitutes a main feature of what is considered the typical entrepreneurial attitude. (Schumpeter's 'creative destruction' is thus an analogy to Piaget's concept of play as assimilation.)

This structural similarity between playing and being or wanting to be a (good) entrepreneur explains why business games and the like are used so often in business and especially entrepreneurship education. Now the use of computer-based (educational) games applied in entrepreneurship education can build on this double similarity regarding the involvement and motivation of the e-learner: self-motivated autonomy of the game-player and entrepreneur and the social interactivity of playing games and using state-of-the-art social-software (in e-learning).

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## SUPPORT OF ACQUISITION AND ORGANIZATION OF KNOWLEDGE ARTIFACTS IN INFORMAL LEARNING CONTEXTS

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Learning takes place in formal and informal contexts. In contrast to formal learning, where institutions or authorities like teachers set learning goals and provide didactically and instructionally prepared content, informal learning depends on the learner's interests and needs. Therefore informal learning contents are often collected and organized by learners themselves. As the internet provides an abundance of content that may be used in informal learning, we focus on web documents as a source for knowledge artifacts in this paper.

Especially novel Web 2.0 applications provide informal learning contents and knowledge artifacts that are often more up to date than formal contents, because even people with few technical skills are able to consume and produce content. Thus the amount of available informal learning content is growing exponentially. But due to the enormous pool of freely accessible data, research, identification and organization of relevant content are difficult. Conventional learning applications and Learning Object Repositories are not able to handle loosely coupled knowledge artifacts and are therefore not appropriate to support informal learning.

That is why researchers are developing Semantic Desktops supporting personal knowledge management. These applications enable organizing knowledge by allowing to build individual knowledge representations. As organizing the resulting knowledge bases needs a personal information management ontology that presets the structure, adaptation to new learning contexts is difficult.

Further, Personal Learning Environments are designed to support individual lifelong learning tasks. They are adapted to learner's needs and allow access to materials to achieve self-set learning goals. They provide possibilities for communication of and collaboration by creation of knowledge artifacts. A big drawback is that they do not implement knowledge management principles.

A third approach, e-portfolios, serves to accompany and record learning processes, but is not intended for learning, rather for displaying and tracking academic achievements.

Our vision is to integrate Personal Learning Environments with knowledge management techniques towards an open framework that utilizes the power of community. The target application takes into account Web 2.0 principles in order to provide additional value by enabling a wide range of opportunities for collaboration and communication among learners in similar situations with the same learning goals.

In this paper we lay the foundations for the implementation of such an application. First we discuss basic technical and theoretical issues concerning informal and formal learning using quickly accumulating, freely available knowledge resources on the web. We present a real-life, online information research scenario of the typical quickly changing tasks and task contexts a knowledge worker has to cope with and deduct functional requirements that lead to a model of knowledge acquisition and management phases that need to be supported. Further we present several existing applications – including Semantic Desktops, Personal Learning Environments and E-Portfolios – that address the requirements informal learning tasks lay upon organization and handling of learning resources and processes. Then we introduce a specification of a browser-based application that integrates seamlessly into learners' daily information research and knowledge artifact organization tasks. Finally we identify requirements for possible technical architectures that enable generic personal knowledge artifact management and draw out further work that has to be done to design and implement an approach that combines functionality of the applications mentioned as related work.

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## VISUALIZATION, EXPLORATION AND PARTICIPATION IN EDUCATIONAL CONTEXT: 3D VIRTUAL WORLDS AT NTNU

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Different techniques can be used to help students to appropriate the body of knowledge presented in a course. These techniques are often aiming at making students active during lectures and promoting activities that can stimulate reflection. Such active learning often requires special teaching premises different from the traditionally used lecture theatres and seminar rooms. In this connection, creating and using 3D educational Collaborative Virtual Environments (CVEs), rich with interactive digital media, may become excellent teaching tools implementing active learning and personal mentoring of students at affordable cost. 3D visualizations are powerful tools for supporting understanding of complex concepts and are widely used in educational context. There is evidence that 3D graphics can in some cases be beneficial for memorization and information retrieval. Due to the increasing possibilities of multimedia and VR technology, 3D CVEs are to a greater degree used to demonstrate concepts that are difficult to represent efficiently enough in real life, for example complex physical phenomena or 3D geometry and arts. In such environments the students can manipulate objects and parameters in order to study complex concepts in a more direct and appealing way than just reading about them. In this way, 3D virtual worlds invite to a participatory and exploratory way of learning and provide a constructivist environment where learners can construct their understanding by exploring, building and sharing their experiences with peers.

The goal of this presentation is to outline some recent research on 3D visualizations in an educational context presently conducted at NTNU. 3D CVEs have in a number of years been used for visualizations of different kinds among the students of our university. An example is a visualization of the social structure in a student community to promote social awareness (awareness of the social situation). For this, we have created a virtual world called Viras, VIRtual Awareness Support. Viras is based on the metaphor of "Archipelago": a virtual world consisting of sea and islands and groups of islands. One of the goals behind this metaphor was to re-create the way in which communities and groups naturally are created and developed. Islands represent groups and individuals, their constellations into archipelagos are communities, and the links, bridges and roads serve as connections between them. In addition, we wanted to create a landscape with a high degree of overview, especially from the "bird's-eye view", of the existing structures by clear distinction of borders and units of community building against the "sea" background, thus promoting awareness of the community development.

Later, this world has been used to visualize a common information space in the community. Different types of cooperative technologies can be used to support construction of knowledge in a university course. We focused on two such technologies, a web forum and a 3D CVE. The former has been widely used for such purposes. The latter was chosen for its ability to provide learning communities with a space that can be enriched with artifacts conveying information, with possibility for interactive manipulation and collaborative co-construction of the environment. The physical configuration of the space can then be used to support navigation and memorization, such as putting related documents in one room. In addition, with a CVE it is easy to provide support for the dynamic construction of the information space. These considerations motivated us to conduct a study where students of our department collaboratively constructed a FAQ in a CSCW (Computer Supported Cooperative Work) course in parallel on a web-forum and in a 3D CVE, comparing these approaches. The results allow comparing these two types of systems and provide some general considerations regarding the support of the learning process.

The same 3D CVE was also used as a tool for a creative collaborative elaboration and visualization of curriculum content in a CSCW course. In this case study we investigated how 3D CVEs can support different phases of a creative collaborative process. Another goal of this project was to improve the students' understanding of the curriculum topics. The virtual environment used was meant to provide a relaxing and informal atmosphere for the creative process. It was also supposed to facilitate uninhibited "brainstorming" by the students, using a pre-made library of virtual objects. The project resulted in a number of original virtual constructions visualizing topics and concepts within the CSCW field with the use of alternative artistic and symbolic means as opposed to the traditional text-based presentation forms.

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## PEDAGOGICAL PODCASTING

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The UAS W-CH (University of Applied Sciences Western Switzerland) intends to develop solutions to address the issue of decreasing time dedicated to frontal teaching, in view of applying the Bologna principles, and which in turn corresponds to the increasing effort required from students concerning their personal work involvement. The "Pedagogical podcasting" is an attractive response, with regard to both its technological as well as pedagogical aspects.

Some important lectures (e.g. theoretical ones) will be recorded, two channels (audio and presentation slides, software demonstration, screens etc.) will be captured through a specific graphics board without human intervention, and the final files will be published on UAS W-CH LMS Moodle, 2 hours after the end of the course. Students will be able to download the MP3 files on their own device or listen to them on a computer. Furthermore, an information retrieval system will be made available to students to facilitate access to MP3 file contents.

Not every lecture will be recorded. After evaluation, 4 kinds of courses will be selected, after approval from lecturers:

- object lessons
- courses offering complex theoretical notions
- courses or workshops including an external intervention (invited lecturer, specialist, professional from the business world)
- courses to be distributed outside UAS-W-CH and/or outside Switzerland

At the moment it is quite difficult to identify exactly which course requirements are needed to make podcasting efficient. This question will be evaluated in the first stage of the study.

UAS W-CH enhances its courses by offering online learning material through its e-learning platform Moodle. Podcasting will complete this material. The course will be recorded; processed and final documents will be published on Moodle, 2 hours after the real life course, in the adequate online course area. A RSS feed will inform students as soon as the course becomes available.

Students can listen to podcasted files on their computer, download them on their MP3 system (ipod, mobile phone etc.) and listen to them later, or use the information retrieval system to find specific information and access related audio information; then they can download this information on their MP3 system or listen to it directly on the computer.

- From a pedagogical point of view, the system provides students with more diversified resources than previously, greatly facilitating their learning task; in situations where students are authorized to miss some courses, or whenever needed, this method enables students (especially in continuing education) to study their curriculum from home. Furthermore the system supports and enhances students' attention level.
- From a technical point of view, the lectures aimed at can be captured using the so-called PAS (Presentation Acquisition System). The PAS is a hardware system capable of collecting three information streams: audio (captured through a lapel microphone worn by the speaker), video (captured through one or more video cameras pointing at speaker and audience) and output on a PC-projector (captured through a device which converts any information projected on the screen into a stream of images). The video channel will not be used in this study.
- Three disciplines have been selected to realize a small-scale experiment: Economics, Data Processing and Information Studies, with a total of 5 professors and about 200 students.
- The testing phase will be held from mid March 07 until mid July 07.

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## THE CAMPUS SATELLITARE DEL SALENTO: A LARGE-SCALE SATELLITE DISTANCE E-LEARNING TRIAL

*Franco Tommasi, Antonio Campa, Andrea De Ferraris, Elena Scialpi, University of Salento, Italy*

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The Campus Satellitare del Salento (CSS) – <http://www.campusdelsalento.it> – will be presented. The CSS is a system developed by the University of Salento for the diffusion and dissemination of knowledge and learning. This information is particularly focused on, but not restricted to, the cultural and academic resources of the Salento region in the south of Italy. The CSS system is useful to address problems arising from teaching large classes of learners distributed throughout a wide geographic area. The use of satellite technology allows the CSS to reach learners in the whole of Europe and in the Euro-Mediterranean basin. The major objectives of the CSS are the use a platform designed to manage e-learning materials, the promotion of an exchange of resources, and the sharing of knowledge among many learners. In the CSS, learners, tutors and teachers can be grouped into a large virtual classroom. Many virtual classrooms can be present simultaneously in a virtual Campus. Each virtual classroom is composed of one teacher, plus several learners and tutors who are physically located in different remote sites, consisting of either multimedia classrooms or single receiving stations. The idea underlying the development of the CSS platform is simple and effective: when a teacher gives a lecture (or a conference, seminar, etc.), his/her lecture is received in all of the linked remote sites. Learners and tutors in the same virtual classroom can follow lessons in real-time while having the ability to interact directly with the teacher, other learners and tutors. People in each remote site are able to send questions via chat to the teacher, who can answer them in turn. A satellite distribution network is used to synchronously broadcast all of the events, therefore, each remote site must have a system interfaced with the satellite network. Presently, ten multimedia classrooms and ten single-computer receiving stations make up the CSS. At each remote site different lectures can be followed at the same time by different students. Each multimedia classroom is equipped with 15 Apple Mac running Mac OS X and one satellite box with a parabolic antenna (to transmit and receive via a VSAT satellite network). Each of the single receiving stations has only a single Apple iMac and a receive-only satellite box with a parabolic antenna. People can use the educational tools and aids that are provided by the teacher in real-time lessons and in deferred mode (as they are also available for use any time on the web). In addition, authorized users can follow the recorded lecture a few minutes after the end of the real-time event. In non-real-time mode, lessons can be received without satellite receivers using a computer connected to a terrestrial distribution network. As a simple and flexible e-learning platform, the CSS is able to host a variety of events, including academic lessons, training courses, workshops, conferences, life-long learning courses, etc. Practical reasons have, until now, precluded the diffusion of ordinary academic lessons. There is also a concern that the successful delivery of lectures needs more motivation than that usually displayed by a freshmen audience. The use of the CSS e-learning platform to facilitate a course for Italian public administration employees and officers is presented at the end of the full paper.

### Projects related to the CSS

The University of Salento launched the first trial of the CSS on March 30th, 2006 after five years of research and testing. Partial funding of this trial of the CSS was provided by the "Consorzio Universitario Interprovinciale Salentino" (CUIS), a group that provides financial support for the management costs of organizations disseminating cultural content in Salento. Several European and Italian-funded projects also contributed to the CSS during this time. These include the European Space Agency (ESA) project named "Multimedia Operative Distance-learning Services for Universities and Schools" (MODUS)<sup>1,2</sup>, another ESA project named "Earth and Space Multimedia systems Enhancements and Extensions" (ESMEE)<sup>3</sup> and the Piano Operativo Nazionale (PON), a national Italian project named "Completamento e potenziamento del Centro di Formazione a Distanza Satellitaria dell'Università di Lecce". These projects involved the University of Salento and other European and Italian partners including the European Space Agency, Space Software Italia (I), Alenia Spazio SpA (I), Espresso Ltd (UK) and Clío Ltd (I).

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<sup>1</sup> De Blasi M., Tommasi F., Campa A.: A New Dimension in Multimedia Distribution over Satellite and Terrestrial Telecommunication Systems. Proceedings of SoftCOM 2000, October 2000, Split, Croatia

<sup>2</sup> Tommasi F., Campa A., Mongelli A. De Riccardis F.: "Telematic University": an experiment of quality distance-learning. Proceedings of SoftCOM 2001, October 2001, Split, Croatia

<sup>3</sup> Tommasi F., Molendini S., De Riccardis F.: Collected Experience from Satellite E-Learning: The Esme Project. Proceedings of the International Conference on Telecommunications and Computer Networks – IADAT-tcn2004, December 2004, San Sebastian, Spain

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## A VISION FOR FUTURE LEARNING WITH ICT AND WEB2.0

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There are a number of trends and challenges affecting future learning in the knowledge-based society. Access and usage of technologies shape services and competency requirements, changing life trajectories affect learning needs in all phases of life, and globalization and demographic evolution bring new needs and challenges for education. Realizing the Lisbon and Education and Training 2010 objectives for modernizing education and improving competitiveness requires a fundamental transformation in education and training systems. Information and communication technologies (ICT) will have a particular role in realizing these changes in the digital society.

Future learning needs to be a lifelong activity, combining organized and self-directed learning at educational institutions, at work, at home, and in the free time activities, answering to the current learning needs of the learner. An IPTS workshop on 'The Future of ICT and Learning in the Knowledge-based society' developed a holistic vision of ICT-supported learning in 2020.<sup>2</sup> In this vision, the learner is placed at the centre, but learning is considered to be a social process where learners are also co-producers of learning. It supports flexibility but still acknowledges the importance of guidance. According to this vision, learning takes place in Learning Spaces, which are experienced by the learner as social and connecting, personal, trusted, pleasant and emotional, dedicated for learning, creative and flexible, open and reflexive, certifying the learning results, managing knowledge resources and also inclusive.

Social computing applications (often referred to as Web2.0) enable new ways of connectivity for networking and interaction. They have considerable potential and are already having an impact on society.<sup>3</sup> An expanding number of Internet users is visiting and participating in social networking sites, blog communities, collaborative content production and using new interfacing applications. Social computing applications broaden the role of users in the delivery of services and in promoting innovations by facilitating increased participation and awareness. The disruptive impact of Web2.0 can lead to a whole new paradigm of a user-driven knowledge-intensive service culture.

Many of the new applications can be used for supporting the vision of Learning Spaces. Collaboration with peer learners and interaction with mentors can be supported with flexible learning approaches through *blogging*, *wikis*, discussion environments and e-Portfolios, which also support reflection and demonstrating learning results and competencies. Search facilities, *podcasts*, *RSS* feeds, newsreaders, and tagging provide means to build personal portals for following and accessing information with personal relevance. Existing and emerging interest-based communities provide support for informal learning outside organized education. Altogether these provide versatile elements to support personal lifelong and '*life wide*' learning in different phases of life. Moreover, they demonstrate that ICT can really provide new benefits for interaction, collaboration and learning.

The main challenges to supporting Learning Spaces and using new technologies in learning relate to developing pedagogical approaches that utilize the benefits and flexibility available. There are interoperability issues in both technical implementations and between educational institutions, and new means for supporting learning after initial formal education (e.g. acknowledgement of learning, time resources, relevant learning opportunities) are needed. Both digital divides in ICT skills and access and social divides could cause exclusion. Emphasis needs to be put on providing skills to individuals to find and use the existing resources and applications for personal continuous learning. It would be worth addressing these challenges so that the new technologies, already increasingly used in the society, would also be more effectively used for educational purposes. Incorporating them in education could support active learning models and collaboration and at the same time empower people for lifelong learning in new ways and to a whole new extent.

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<sup>1</sup> The views expressed in this publication are the sole responsibility of the authors and do not necessarily reflect the views of the European Commission.

<sup>2</sup> Punie, Y. et al. (2006). The Future of ICT and Learning in the Knowledge Society, European Commission, DG JRC, Institute for Prospective Technological Studies, <http://www.jrc.es/publications/pub.cfm?id=1407>

<sup>3</sup> Pascu, C. et al. (2007). The potential disruptive impact of Internet 2 based technologies, First Monday, vol 12, no. 3. [http://www.firstmonday.org/issues/issue12\\_3/pascu/index.html](http://www.firstmonday.org/issues/issue12_3/pascu/index.html)

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## CHALLENGES OF THE MARKET-DRIVEN MODELLING BY CONTENT ENGINEERING IN THE CONTENT LIFE CYCLE

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The future development of all kinds of e- and distance education such as computer based, web based and blended learning are dependent on two main content streams: the content development and the content application, because content is the carrier of the fixed, organisational knowledge. They are influenced by conversion of commercial, social and educational systems, new methodologies of open and distance education, changes by web 2.0 technologies and services.

The content development in the framework of the completely altered world of training and education involves the similar risks of development crises like the software development in the seventies of the last century. That is why the reduced view of isolated applications of content in limited periods of education has to be replaced by the systematic understanding of using contents in a complex product life cycle embedded in the globalised educational market with special conditions and requirements. Therefore, it is clearly evident to apply and to adapt the whole methodology and technology of the modern software engineering and re-engineering to the content development and application processes in order to create efficient systems for the content life cycle in the global markets.

Market analysis enable the market participants to identify the general market situation, the future market trends, the own market positions, the relevant consumer groups, the important product clusters, the needed service functionality, the existing process quality, and the social market influences. The gained market know-how is necessary for defining the customer requirements and environmental conditions concerning the stages of the content life cycle. The existing analyses document the imperative necessity to develop consistent process chains for content development, application, service, and maintenance. Therefore, the content life cycle model is to be preferred instead of isolated content applications. Content life cycle is closely linked with the system engineering approach and in the particular case as content engineering.

Systems engineering is an interdisciplinary approach of systematic procedure in the systems development and realisation. Content engineering means engineering-based, transparent and comprehensible content development and application.

There are many different and new development and application strategies, methods and models for developing digital products such as software and content. One of the most interesting is the so called V-Model because it surmounts the difficulties of the cascade models and leaves scopes for using new methods and tools.

Content development and application should be professionalized concerning the content life cycle management, the market analyses, the integration of the potential user groups, the content production processes, the interdisciplinary division of work, the content quality management, the use of the latest methods and technologies, etc. The change from the semi-professional, driven by sporadic providers to the professional, market-driven content development and life cycle will be promoted and realised by integrated content life cycle systems and content development environments.

The feasibility of such a concrete approach was demonstrated by the successive construction of competence networks of content providers and users.

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# eCONTENTPLUS: A MULTIANNUAL COMMUNITY PROGRAMME TO MAKE DIGITAL CONTENT IN EUROPE MORE ACCESSIBLE, USABLE AND EXPLOITABLE

*Spyridon Pilos, European Commission, DG Information Society and Media*

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## The context, the programme and its objectives

eContentplus is a multiannual Community programme which has as overall objective "to make digital content in Europe more accessible, usable and exploitable, facilitating the creation and diffusion of information, in areas of public interest, at Community level" . The programme has an enabling role: it will contribute to creating better conditions for accessing, using, reusing and exploiting digital material, based on which it will be possible to build added-value products and services across Europe.

The programme has a total budget of 149 M€ for the period 2005-2008 and is implemented through annual calls for proposals. The budget allocated for the first 2 years was 27 M€ and 28 M€ respectively, while for 2007 and 2008 an annual budget of 47 M€ is foreseen.

## eContentplus call 2007 – educational content

Educational digital content is content that can be used for learning in different contexts: in formal education and training programmes, in non-formal general education and continuing vocational training courses, as well as for self-learning. In 2007 two types of projects will be funded: targeted projects, which aim at solving specific known problems and best practice networks, a new project type introduced for the first time in 2006 combining consensus building and awareness raising activities (networking) with real-life experiments.

**Best practice networks** are expected to combine real-life experiments with consensus building and awareness raising activities (networking). Their specific objective for educational content is to implement existing specifications and standards of learning technologies on a critical mass of existing digital educational content, both user-generated and professionally produced, in specific contexts of use for education and learning and assess their suitability (fit for purpose) and to contribute the results of these assessments to the process of building consensus on the adoption and promotion of specifications and standards across Europe.

**Targeted projects** for educational content should aim at addressing one or more of the following issues:

- Facilitate the co-existence, the use and the exchange of existing professionally produced content and user-generated content in Learning Content Management Systems and in real context of use
- Improve the semantic interoperability between digital libraries of content held by cultural institutions that has not been produced specifically for education and Learning Content Management Systems in order to facilitate the exploitation of cultural heritage material for education.
- Implement solutions that make it easier for users (both individuals and organisations, with special focus on SMEs) to find and use existing digital content that matches their learning and skills development needs.

## Information on the programme

The deadline for receipt of proposals for the 2007 call by the Commission is **4 October 2007 at 17:00** (Luxembourg local time).

Background documentation on the eContentplus programme (work programme, guide for proposers, frequently asked questions, pre-proposal service etc) is made available at the address: <http://ec.europa.eu/econtentplus>.

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## PERSONAL LEARNING ENVIRONMENTS, VIRTUAL LEARNING ENVIRONMENTS AND FORMAL LEARNING

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The concept of a personal learning environment (PLE) has arisen out of a dissatisfaction with virtual learning environments (VLEs), otherwise known as learning management systems. Some learning technologists regard VLEs as instruments of central institutional control rather than empowering to learners. They are concerned that VLEs do not meet the needs of lifelong learners in particular who are forced to use a range of incompatible systems which fail to allow continued access to their learning content and their own contributions. Meanwhile the engaging tools emerging in Web 2.0 appear to be encouraging participation in a way that VLEs are failing to do. The PLE is thus an attempt to help learners manage multiple learning tools, social software and information sources supplied by formal and informal learning providers.

The debate around PLEs is taking place primarily in blogs distributed across the Internet and is being stimulated by UK state funding. This paper examines what the PLE protagonists are saying, and what institutions with existing investments in VLEs can learn from the discourse.

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## A WINDOW ON MY PRACTICE: ENHANCING INDIVIDUAL ONLINE TEACHING QUALITY THROUGH ONLINE PEER OBSERVATION AND SUPPORT

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In 'traditional' terms, the practice of 'peer observation' is typically understood as a process whereby a teacher participates as an observer in a lesson taught by a colleague for purposes of exploring the learning and teaching process and environment. This 'observation' then leads on to reflection and discussion, with the underpinning long-term aim of enhancing students' learning through focusing on the practice of the teacher. There is an emerging awareness that one of the potential limitations in typical peer observation is a restriction to group teaching within classroom settings.

Building on the work of a few early implementers looking at how practices might be applied to, and adapted for, the online learning context, our work suggested that the 'archived' nature of online learning opens up possibilities for On-Line Peer Observation (OLPO) to enable online tutors to work together in ways that have not practically been possible in the past. In the world of Web 2, doing peer observation online may offer a lot more than it did in the classroom. We report on a case study in which OLPO enabled professionals working in different disciplines and using different VLEs to look through a "window" into the practice of another e-learning professional, develop a supportive relationship not unlike the process of clinical supervision seen in the practice of some health care and psychotherapy/counselling practitioners and enhance our own practice through mutual learning. The opportunity for fellow-professionals to work with others within the wider community of online learning practitioners and professionals and deepen their understanding of the online learning/teaching process and enrich awareness of what works more, or less, well in particular e-learning environments seems especially relevant given the very 'newness' of the online context and the sheer pace of technological development the "hot technology" environment.

Our experience has shown that OLPO is a window across boundaries of discipline, e-learning environment and mode of delivery is both possible and valuable and the potential is much greater. Whether working individually or based in a large organization, even those working at the frontiers of the latest social software technology within their teaching can use OLPO to gain support by mutual observation in an interdisciplinary, cross-technology, multi-cultural and global context. In fact, by exploiting networks established within the broader practitioner and professional communities made possible through Web2 the development of such a relationship is potentially across boundaries that would otherwise be restrictive – in other words the participants can choose to develop these relationships even across global boundaries rather than have this restricted to individuals with whom they can make face to face contact. Such an approach adds a new dimension for collaborative learning and peer support amongst, even geographically and professionally isolated, e-tutors across traditional boundaries whether of discipline, geography or technology.

We hope to share with delegates our experiences and reflections on this process whilst continuing to generate new questions about the process and value of OLPO from a variety of perspectives.

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## FACILITATING STUDENTS' AUTONOMOUS LEARNING USING A WIKI IN HEALTH AND SOCIAL CARE EDUCATION

*Jenny Jepson, Jane Morgan, University of Southampton, United Kingdom*

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Health and social care pre-qualifying and post-qualifying education has a long established association with small group learning and teaching. Using a small scale case study of practice this paper considers the pedagogic design of a wiki designed to allow students to follow an online enquiry learning process. The findings of the evaluation so far, in terms of the experiences of learners and teachers who have completed a period of using the wiki, will be discussed along with implications and recommendations to date. Questionnaires and examination of online dialogue were used to collect data. Early findings suggest that learners enjoy using a relatively unstructured online enquiry process and those teachers who are most positive about the value of the online process of enquiry are those who have experience of and enjoy facilitating learners online.

A model of Enquiry Based Learning [EBL] was introduced to pre-qualifying nursing curricula in the School of Nursing and Midwifery, University of Southampton in 2002. The aims of the process are, to explore the real world of practice, think critically about real issues and problems, and use reflective thinking and systematic enquiry to create evidence based recommendations for best practice related to client care. Since then the School has introduced blended learning through their learning and teaching strategy.

In this study a wiki was constructed using previously published virtual learning environment architecture in order to explore learners and teachers views of its potential to support enquiry based learning. Ethical approval for the research study was gained from the School of Nursing Research Committee. The most appropriate methodology to achieve the aims within the available timescales was drawn from an evaluation framework designed to assist the integration of technology in learning across the School of Nursing and Midwifery. The evaluation framework supports a naturalist enquiry approach and small practice focused case studies.

The findings of the case study indicate that group members share a strong commitment and stay on focus throughout the enquiry, they develop time-management skills, self-observation and self-monitoring skills. In some cases learners achieve a deep level of enquiry and make evidence based recommendations for best practice. Learners appreciate opportunities to be autonomous, particularly in relation to controlling the online environment. Early findings from teachers' views are that they are surprised by learners' proactive response to the process, conversely they are reluctant to let go of traditional teaching methods and are concerned about the time consuming aspect of online facilitation. Ongoing in-school staff preparation and support is needed to assist teachers and students to adapt to online EBL, and online learning quality assurance criteria are needed to achieve parity in online facilitation across all groups.

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# USING DESKTOP VIDEOCONFERENCING IN ASSESSMENT: A STEP BACK OR A STEP FORWARD IN ORAL EXAMINATION

*Mateja Geder, Suzana Cergol, Kristina Pikelj, DOBA Maribor, Slovenia*

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## Introduction

DOBA is one of the largest private educational organisations in Slovenia and provides accredited study programmes at the tertiary level which are primarily designed for traditional, i.e. f2f delivery and have been adapted by the college for online delivery. Assessment methods are mainly based on continuous assessment adapted for online environments; however, at the end of each course, students must sit for a written and/or oral exam which is not online but is administered at the college or at its study centres. One of our main goals is bringing assessment strategy closer to the online study mode in order to achieve pedagogical consistency of course delivery and assessment.

## Research

In order to pursue this goal we decided to conduct a small-scale research. The purpose of the research project was to explore the use of DVC (desktop videoconferencing) for oral examinations. By using this technology in a pilot group of 45 students and with two teachers, we wanted to find out what effects the technology introduces to pedagogical conception of the assessment and what influence it has on the emotional state of the students sitting for the oral exam, in comparison with examinations in a f2f environment. We wanted to test the following hypotheses:

- DVC-based examination puts students under more stress in comparison with traditional oral examinations.
- The examiner should adapt the approach to reduce stress during oral examinations through DVC.
- Special encouragement techniques enabled by DVC and used appropriately by examiner reduce stress.

For the research we chose a DVC tool Windows Live Messenger. We carried out staff training for the examiners, a new concept for oral examination focusing on the potentials and limitations of technology was developed.

In the research a co-relational design was utilized. The variables obtained from the survey included students' overall satisfaction with the approach taken from a pedagogical, organisational and technical point of view, their perception of stress levels before and after the examination, students' overall satisfaction with the examiner and their satisfaction with the encouragement techniques used by the examiner during the examination.

Students' overall satisfaction with the approach taken and their perception of stress levels before taking the exam yields a correlation of 0,54, after the exam it yields a correlation of 0,22. The satisfaction of students after the examination through DVC is higher or at least the same as their experience of the examination in an f2f environment. 83% of the students believed that the examiner contributes to a less stressful situation, and 57% found positive attitude as the most important quality of the examiner. For 27% this was communication skills. The results also show that the level of exam stress decreases if the examiner uses special encouragement techniques enabled by DVC.

## Conclusion

The research shows that oral exams can be transferred effectively into an online medium through DVC by giving attention to the general principles of using DCV and appropriate teacher training. The medium is therefore not perceived as a distracter or alienating factor; on the contrary, it can be perceived as a natural, integral part of the study process that is delivered online. DVC, on the one hand, enables multi-channel communication to address the needs of different learning styles and the employment of additional methods of encouragement which contribute a great deal to the creation of a positive exam atmosphere. On the other hand, it is more difficult to establish non-verbal contact with students, it takes more effort to create and maintain a positive atmosphere, and it is more difficult to monitor students' communications and assess their performance if students take part in the exam in pairs.

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## NEGOTIATING LEARNING: TOWARDS A COMBINED LEARNER-SYSTEM DRIVEN INTELLIGENT TUTORING ENVIRONMENT

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Nowadays changes at the technological, economical, and social levels occur so rapidly that, as educators, we need to offer flexible and customized formulae to our busy and demanding adult students. Courses end up being rather general in scope in order to work for such large numbers of students and they are organised around a certain average level, a notion with a negative side since in every course there will inevitably be students who do not perfectly fit in the syllabus. Knowledge gaps in particular, to use a constructivist term, may damage the knowledge building and cause a structural collapse.

Current CALL systems are being enriched by adopting strategies and techniques from adjacent fields such as computational linguistics (e.g., analysing the entries in the student system and/or generating natural language), Artificial Intelligence (e.g., knowledge-based systems, student modelling), cognitive psychology, psycholinguistics, human-computer interaction, etc. This paper presents part of the architecture of I-PETER II<sup>1</sup>, a research project that integrates Artificial Intelligence techniques with cognitive and socio-constructivist foundations, to design and develop the architecture of a novel ITS for international English for business and work. This system models the level diagnosis and material selection procedures in an analogical way to a good English teacher in conventional face-to face taught courses. A good traditional English teacher, among other things, identifies the most suitable learning paths for each group of students and negotiates certain aspects of the syllabus to be taught, in the sense that he tries to adapt to the knowledge level, learning needs, preferences and other circumstances of the individual students that form the group, without compromising the quality of the results. I-PETER II attempts to achieve the same through a flexible interface and a three-dimensional diagnosis task model which negotiates with the user and may change the learning path accordingly within what is considered to be didactically acceptable.

I-PETER II is a combined user-system driven ITS which allows for a certain level of negotiation between the user and the system to adapt learning to the former's wishes without compromising the latter's didactic quality. In order to achieve such negotiation or *partial* customisation, in I-PETER II the didactic model contains the learning materials together with the course syllabus, whose contents are organised hierarchically and sequentially in a flexible way, to allow different learning paths taking into account factors such as the learner's mother tongue, his learning goals and other preferences and circumstances, which are indicated by the learner in a menu-based interface. They can be viewed and changed from one session to another and even at any point during the same session (by simply clicking a button). In order to adapt to the student's requirements without compromising the system's didactic rigueur, the didactic model contains a series of restrictions of what is not didactically acceptable (e.g., practising time prepositions before knowing certain verbal tenses). Finally, I-PETER II is self-contained (it contains the necessary theoretical explanations, glossaries, etc., to follow the course) and exists on the web (and will be fully operational on our research group's web site: [www.atlas.uned.es](http://www.atlas.uned.es)), which guarantees flexible access on the part of the user. Given our student profiles (professional adults, mature students, etc.), materials are hierarchically structured and divided into short learning units. Furthermore, their presentation also allows for certain customisation (to adapt to time limits, etc.), regarding the type of scaffolding, which takes the form of theoretical explanations.

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<sup>1</sup> The research presented in this paper has been sponsored by the Spanish Ministry of Education and Science (HUM2004-05758/FILO).

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## REPORTS OF THE 'DEATH OF GEOGRAPHY' HAVE BEEN GREATLY EXAGGERATED: WHY UK DISTANCE LEARNING STUDENTS PREFER FACE-TO-FACE TUITION

*Troy Cooper, The Open University, United Kingdom*

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The advent of ICTs has changed forever the possibilities of interaction between learners involved in higher education with each other, and with those who teach and support them. Interactive contact via synchronous and asynchronous talk, webcam, email, wikis and blogs allow varying types and degrees of communication and conversation at a distance. Underpinning crucially the change to electronic contact has been the proposal that it changes the role of teachers in a revolutionary way: moving them from being the 'sage on the stage' to the 'guide on the side'. This repositioning of the teacher-student relationship apparently confers a number of benefits on students of flexibility, autonomy and independence in their learning. Yet a number of studies of institutions using electronic contact as the sole or principal means of student support on courses have found lower levels of retention and expressed preference for face-to-face teaching contact from students. If electronic support of student learning is to succeed in its aims, and be seen by students as an acceptable form of support, it is important to establish what students believe they gain from face-to-face contact and the particular role that they believe face-to-face tuition to play in their learning.

I undertook a small empirical study with UK Open University students using a telephone interview with both closed and open-ended questions. I established primary approach to learning, and the perceived benefits of, and preferences for activity or content of, tutorials of different groups of learners. The results indicated that strategic and deep learners were more likely to attend tutorials than surface learners, with a high proportion of high attenders convinced that attendance benefited their assessment grades. Furthermore the valued activities in tutorials were those in which the tutor took the lead reworking course material and supporting students' engagement with assessment. In open questions about the value of face-to-face tutorials students clearly wanted reassurance about personal progress, and that compared to their peer group they were experiencing comparable levels of difficulty and achievement, confirming for them that to continue studying was a course of action that would benefit them.

The results of this study should be set within the context of Jerome Bruner's notion of a 'micro-culture of praxis': an ecological approach which proposed that the context in which learning is done in terms of perceived purpose, demand characteristics of the situation of learning, motivation for learning and assessment or use of learning conditions and produces what is learnt. The particular context of distance study in which there is isolation of learners from peers and other learning communities, compounded by competing demands on their time, and the assessment of successful learning by tutors and their primary teaching role of mediating and reworking course content in ways that will support student engagement, mean that the 'micro-culture of praxis' pushes students towards a model of learning which is strongly focussed on the tutor and what the tutor thinks. Finally when students go to tutorials they look for affirmation from their peer reference group that the difficulties and challenges they face in studying are usual and not indicative of a lack of capability peculiar to them.

Students align the model of learning they prefer to the characteristics of the model of teaching with which they are presented. Whilst a particular tutor is the main focus and gatekeeper of learning and achievement, even students studying at a distance will value face-to-face over electronically mediated support which dilutes focus on the tutor: whilst face-to-face tutorials are largely one-to-many communication, most forms of electronic support assume and support many-many as the preferred model. Electronically mediated support would only be preferred if the curricular and pedagogic structure of the course and not just the role of tutor underwent revolutionary change, altering the micro-culture of praxis. This includes the creation of boundaries around online contact and learning activity, and delimitation of desirable work in that environment, so that the undeniably larger potential of this mode does not simply translate into a workload burden for time-poor part-time students.

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## TECHNOLOGIES IN USE: HOW CONTEXT AND DESIGN DRIVE THEIR EFFECTS

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Computer conferencing has been widely advocated as a desirable application of ICT in universities, because dialogue and discussion are associated with high level learning outcomes and because it enables the social context for learning to be extended into the virtual environment. There are a growing number of ways in which learners can interact with each other and with a range of more expert or experienced others, through the Web, thus constructing a social context for their learning in a virtual environment. However, experience of the use of asynchronous conferencing demonstrates that it has not proved to be a tool which easily delivers the learning benefits that in theory it promises, and the literature on its use includes both enthusiastic promotion and disappointed critique. This conflicting evidence is not a helpful starting point for teachers looking for guidance in how best to use computer conferencing. Research of undergraduate courses at the Open University was undertaken, focusing on a variety of forms of interaction, including computer conferencing, in order to identify its impact on the quality of student learning and to be able to provide better-grounded evidence of the determinants of this impact. This paper describes the contrasting experiences of students on three courses that were judged to be similar in terms of computer conferencing, yet which had very different impacts on student take-up and response.

The three courses were researched using a survey of a random sample of students, followed by email and telephone interviews of students and tutors and participant observation in the case of one course. One of the courses generated high levels of participation while the other two did not, though for different reasons and in different ways. The Astronomy course did not engender widespread use of the etutorials it incorporated, whether by readers or contributors, in spite of the tight link between course content and tutorial content. The timing and the lack of structure of the etutorials put off most students who tried the first one, and study pressures thereafter effectively meant that they made little or no use of them. The Business Studies course integrated tutor group conferences through marks in two assignments but there was too little advocacy of conferencing during course study and no detailed guidance or structure for the process of interacting online. Enthusiastic and skilled tutors could make a difference, if they provided good summaries, or were responsive. However, students could simply avoid participating in the computer conferencing and still do well in assignments. The Environmental Studies course however created a well-structured environment, where the content of what students had to do was central to the course learning outcomes. Highly structured activities online were key to getting all students participating from the beginning of the course. Marks were awarded for participation but the process also proved intrinsically valuable to the core learning objectives of the course.

The course team made no compromises on the idea of the Web as a space for discussion and debate as well as information gathering.

We need to move away from seeing a direct relationship between particular technologies and explicit learning experiences and outcomes. Computer conferencing for example can bring great learning opportunities and it can also be a non-event or even frustrate and undermine learning. It is in the detail of the practices through which students encounter it that we find the drivers for how it will impact on their activity and learning. Context and practice are not less important than the technologies in use. We may use one term for a technology such as computer conferencing, but in practice, there are multiple instantiations of that technology in use, generated by the different formats and purposes to which it can be assigned.

Researchers therefore need to clarify the teaching and learning practices as well as the technologies in use so that it is clear what kind of experience of technology their findings relate to. This will help avoid misleading practitioners either in the direction of false positive expectations or equally false negatives. Teachers seeking to replicate the positive outcomes of research into conferencing may not be able to achieve similar results without more detailed descriptions of the activities students engaged in via conferencing and which were the subject of the research. At the Open University, narrative accounts of online learning activities are also being supported by visual maps that capture sequences of activities, the supports these require in order to work effectively and the outputs to which they lead. The aim is not only to document what has been researched more effectively, but to contribute to using such findings to support good course design.

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## CAPTURING PRACTICE AND SCAFFOLDING LEARNING

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Despite the exciting possibilities technologies offer examples of truly innovative forms of learning maximising the potential affordances new technologies seem to offer, are still rare. The paper outlines the approach being adopted at the UK Open University, which includes the collation of forty-four institution-wide case studies and the specification/build of a learning design tool. The work centres on two main questions. How can we gather and represent practice (and in particular innovative practice) (**capture and represent practice**)? How can we provide 'scaffolds' or support for staff in creating learning activities which draw on good practice, making effective use of tools and pedagogies (**support learning design**)? The aim of the project is to build on current work on learning design to produce a tool that aids the course design process for, with an emphasis on the use of technology-enhanced learning.

We have identified several benefits to adopting a learning design approach:

1. It can act as a means of eliciting designs from academics in a format that can be tested and reviewed with developers, i.e. a common vocabulary and understanding of learning activities.
2. It provides a means by which designs can be reused, as opposed to just sharing content.
3. It can guide individuals through the process of creating new learning activities.
4. It creates an audit trail of academic design decisions.
5. It can highlight policy implications for staff development, resource allocation, quality, *etc.*
6. It aids learners in complex activities by guiding them through the activity sequence.

We are adopting an iterative methodology focusing on the two questions outlined above in parallel: a) capturing and representing practice – through user consultation and case studies and b) supporting learning design – through the development of an online tool and associated workshops. A series of user consultation exercises were undertaken to gather requirements for an LD tool specification, followed by the collection of forty-four institutional case studies. These also highlighted a range of perceived barriers and enablers to adopting a learning design approach and to more effective use of technologies to support learning. From this a series of overarching factors emerged; designers and teachers wanted, including: discipline specific case studies, information on tools and how they could be used, ideas on innovative learning activities and step-by-step guidance through the process of creating learning activities.

In addition to gathering institutional case studies, the other aspect of our learning design project is to develop an online learning design tool, this included a mechanism for visually representing learning activities. Diagrams were built using a mind mapping tool Compendium<sup>1</sup> which enables you to provide hyperlinks between different parts of the diagram. It also enabled us to tag icons with appropriate metadata (such as roles, tools, tasks, resources, *etc.*) and to layer additional information about each element so that when the user hovers over an icon additional information appears. By clicking on an icon the user can either be linked to a specific URL, resource or tool, or to a sequence of layered additional information. The intention is for the LD tool to be populated with both the information derived from the case studies, as well as selected resources and expertise drawn from our own experience in the field and the wider research literature. Part of our philosophy in terms of developing a specification for the online learning design tool is that it needs to accommodate the following characteristics, rather than impose a single 'correct' way of working. Initial evaluations of eight faculty workshops have been positive – users found the software easy to use and found it enabled them to develop a common approach and language for representing and sharing their designs. The paper will describe these developments in more detail along with an indication of planned future work.

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<sup>1</sup> <http://www.compendiuminstitute.org/>

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## PROFESSIONAL DEVELOPMENT FOR PART-TIME TUTORS: THE CHANGING ENVIRONMENT OF THE OPEN UNIVERSITY UK

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The potential of Information and Communication Technologies (ICTs) to change the roles of teachers has been well evidenced. Stephenson noted in 2001: "the technology of online learning appears to facilitate a migration from traditional didactic modes to more learner-managed learning modes if teachers and designers wish to take such a journey" (Stephenson, p.49). More recent discussions have emphasised the potential for online interaction to develop learning communities for professional development (Macdonald and Hills, 2005). In this case study we examine the changing roles of part-time tutors within the Open University UK (OU UK) and look at the associated professional development needs that have arisen in the use of changing technologies. We examine this in the context of some of the principles underpinning professional development of part-time tutors in the OU UK: that it is a continuing and collaborative process for all staff and that it provides a model for the variety of approaches and media used by tutors with their students and thus an opportunity for enhancing practice through reflection.

Changing roles and staff development needs are identified across three periods: the twentieth century; the online environment; and in the context of Web 2.0 developments. From the 1970s to the 1990s, the production and the presentation of programmes of study in the OU UK were considered to be separate and distinct activities generally undertaken by different categories of staff. The OU's part-time tutors had clearly defined roles related to the delivery and facilitation of student learning from materials produced centrally. Professional development for tutors in this role employed the technologies used to support students: in particular, specially developed print materials, face-to-face meetings, and telephone support. The increasing use of ICTs within OU study from the 1990s has occasioned new possibilities for the training and development of the OU's 7,800 part-time tutors which are discussed in the context of the principles outlined above. Online working has also created opportunities to bridge the separation between course writers and both tutors and students and so challenged some of the original staff roles.

The advent of web 2.0 technologies, their adoption within programmes of study and more general availability within the OU and externally provide new possibilities for interaction between all those involved in teaching and learning. Interactive quizzes, blogs and wikis (for example) are changing the roles of staff and their associated training and development needs. Some of the issues involved in these changes are indicated in the paper as subjects for discussion at the conference.

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## STUDENTS' PERCEPTIONS OF HIGHLY INTERACTIVE, REFLECTIVE AND PROCESS ORIENTED E-LEARNING COURSES

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The traditional delivery system in universities and colleges has for relatively long period of time been the predominant mode in a classroom with a professor giving lectures to students who are listening to her/him and making notes. Interaction between the professor and students has been perceived to be a crucial learning ingredient in this delivery platform. Innovations in educational delivery thinking and mechanisms have, however, challenged this. These include interactive and reflective schools of thought (Schon, 1987, and Clegg, et al., 2002). Progress in information technology has enabled the use of re-born educational delivery methods such as distance learning to obtain new existence. Furthermore the progress in IT has escorted a completely new paradigm, eLearning. The question is what are the ingredients for efficient eLearning in various educational courses?

The purpose of this research is to study students' perceptions regarding the features of an eDelivery platform for teaching a highly engaging, interactive and process oriented course, Software business at Tampere Polytechnic University in Tampere, Finland and eLearning Professional course at Open University in London, United Kingdom. There are two important angles to this research: pedagogical options and eLearning with its possibilities to enable various learning opportunities.

The research investigated the following issues:

- background of the respondents;
- prior educational conditions;
- other characteristics of the respondents (Uncertainty tolerance, Time management skills, Motivational level, Learning style suitability to eLearning, Active learner and self-starter);
- perceptions of the respondents regarding the characteristics of eLearning.

According to the key findings of the research the respondents thought that:

- their backgrounds are suitable to eLearning;
- eLearning enabled somewhat faster learning;
- eLearning improves productivity;
- collaboration seems to help learning;
- physical meetings would contribute positively towards learning;
- they confirmed the need for synchronized and asynchronized meetings;
- eLearning is more suitable to the individual needs than traditional learning;
- they were quite indifferent regarding the choice between eLearning and traditional learning;
- their responses were different regarding the question: "Is learning better in the traditional mode if both modes are used?"

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## THE MEANS OR THE END? THE USE OF ON-LINE TOOLS IN A BEGINNERS' ITALIAN LANGUAGE COURSE

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This paper proposes to examine the use of on-line tools such as wikis and blogs in a beginners' Italian course, and is based on a six-week pilot run between October and December 2006 at the Open University.

The Open University is developing a new Virtual Learning Environment, based on Moodle; OU developers are working with Moodle to develop and refine the online tools available. The new generation of OU courses, of which Italian is part, will be delivered using blended tuition, a mix of traditional tutorials (face-to-face and/or audiographic conferencing) and online learning.

The Open University is launching *Andante*, an Italian course for beginners, in November 2007, and the pilot played an important role in informing course design. The pilot course included a bought in course book and CDs, and a course webpage, with links to quizzes, a student forum, a tutor group forum, a glossary, blogs, wikis and podcasts. In addition students had tutorials on Lyceum, the OU's audiographic conferencing tool. During the pilot, two particular issues came up:

Firstly, collaborative learning. Online tools such as blogs and wikis allow students to collaborate and build shared resources. Contributing to a blog or wiki in Italian means having the confidence to expose one's writing in Italian to other students, while using a glossary compiled by students also requires a certain level of mutual trust.

Secondly, the use of online tools in a foreign language. The successful use of online tools in language learning depends not only on the IT competence of students, but on their language competence. Students may be competent and confident when participating in English, but far less so when participating in Italian.

When designing tasks for online learning, therefore, we have to remember that the use of online tools in language learning differs from their use in other academic subjects in one key aspect: language is not only the end, but also the means by which we ask students to express themselves.

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# ON EVALUATING THE QUALITY OF COMPUTER-SUPPORTED COLLABORATIVE LEARNING

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## Defining collaborative learning

Collaborative Learning is a coordinated, synchronous and interactive activity of joint problem solving, where partners attempt to construct and maintain a shared conception of a problem in order to solve it in common; learning is expected to occur as a result and/or a side-effect of problem solving. This learning is measured by the elicitation of new knowledge or/and by the improvement of problem solving skills of the partners.

## How collaborative learning works

During the interaction, knowledge and skills of the partners are being recalled, tested, compared, contrasted, combined and completed. In this way, it becomes clear what each partner knows, what he/she does not know, how confident he/she is about his/her knowledge, how well he/she can use, explain or defend his/her knowledge, as well as, what he/she does not know but has to learn; partners' knowledge and skills are upgraded, new knowledge is produced and mutual teaching and learning is promoted.

## Computer-supported collaborative learning

Computer-supported collaborative learning (CSCL) is collaborative learning aided by computer and ICT technology. The purpose of CSCL is to scaffold students in learning together effectively. CSCL supports and facilitates group processes and group dynamics in ways that are not achievable by face-to-face communication.

CSCL is much more ambitious than previous approaches of ICT-support in education, such as CBT, WBT or TBT because it targets the acquisition of higher-order cognitive abilities, knowledge acquisition and the improvement of the ability to utilise CSCL tools to a larger degree.

## Analysis of collaborative problem solving sessions

A number of approaches for the analysis of collaborative activities in different mediums and environments have been reported in the bibliography. Some of these approaches focus on problem solving strategies or on plan recognition; others, on the evaluation of partners' involvement or on the process of mutual understanding and the learning effects. The analysis objective is to evaluate the situation or the jointly produced solution or the learning process or even the tools used.

## Case studies – examples of real CSCL systems

In this section, two automatic analysis examples from real CSCL systems are presented. The teamwork process was measured by examining predefined message usage, classified according to a specific taxonomy; the solutions provided were measured by comparing each team's concept map to some model expert maps. The relation between team process and team solutions was studied by a correlation analysis.

## Conclusion

In this paper we have reviewed and categorized some of the most common criteria used in rating the quality of collaboration in CSCL systems. This rating will guide researchers to build better systems incorporating many of these tools. Such systems will greatly facilitate the study of collaborative learning sessions, by automatically producing qualitative as well as quantitative results, in order to reduce analysis times and facilitate the process. They will also assist instructors by providing automatic assessment tools for grading students.

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# BLENDING LEARNING ON PRE-SERVICE TEACHER EDUCATION OF TEACHERS OF ITALIAN AS A FOREIGN AND SECOND LANGUAGE

*Flora Sisti, Giovanna Carloni, University of Urbino, Italy*

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## Blended learning and Second Language Acquisition courses

This paper examines the effectiveness of blended learning in a Second Language Acquisition (SLA) course within the Master of Arts in Teaching Italian as a Second and Foreign Language implemented by the Department of Foreign Languages of the University of Urbino, Italy. Blended learning was carried out within a theoretical framework that envisions teacher education as knowledge construction (Freeman 2001) in a reflective teaching perspective (Schon 1983).

In order to make the SLA blended course effective, face-to-face instruction and online learning were project-oriented; in particular, the SLA face-to-face course was mainly theory-driven and introduced learners to state-of-the-art SLA theories while online learning was practically-oriented. Moreover, within a humanistic-affective pedagogical framework, the in-class instruction was implemented prior to online learning in order that the instructor and learners could establish a good relationship so that learners would feel more comfortable interacting with the instructor via email.

The project-based online activity required learners to plan and devise a teaching unit consisting of four one-hour lessons at the A2 level of the *Common European Framework*. Within an andragogic framework, learners were thus assigned a task aiming to promote the acquisition of job-related skills by means of experiential learning. Learners were required to email the instructor at least two revised drafts of each lesson and each revision had to be carried out on the grounds of the instructor's feedback. Moreover, upon completion of their teaching unit, learners were introduced to reflective practice through online peer- and self-evaluation: first, learners peer-evaluated their colleagues' teaching unit; second, learners had their teaching unit evaluated by a peer; third, learners self-evaluated their own teaching unit. At the end of the online activity, learners filled in an evaluation form focusing on the online activity and tutoring.

Findings indicated that blended learning was particularly effective thanks to the integration of face-to-face theory-driven instruction and the online project-based activity. The online activity implied learners' consistent and active engagement in the creation and revision process, entailing an informed use of the issues discussed in SLA in-class instruction which learners found pivotal in their learning process. Learners seem to have highly appreciated the experiential approach to learning, the acquisition of job-related skills, the online individualized feedback, the flexibility of time and place, the promotion of critical thinking, and the opportunity they were given to engage in self- and peer-evaluation.

Peer- and self-evaluation also made learners sensitive to how deeply teachers' learning styles and multiple intelligences (Gardner 1983) can affect their own teaching styles. Furthermore, the online activity gave the instructor the opportunity to implement process-oriented evaluation, which learners appreciated because it encouraged them to experiment while planning and revising their teaching unit.

Future developments of the SLA blended course might focus on the implementation of more online collaborative activities aiming to promote reflective practice.

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## LANCELOT: A TRAINER COURSE FOR VIDEO CONFERENCING IN LANGUAGE TRAINING BASED ON EDUCATIONAL HYPERTEXT STRUCTURES

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Currently distance education is being enhanced by the introduction of synchronous online teaching and learning. Aiming at the professionalisation of this emerging branch of e-learning, the Leonardo da Vinci funded LANCELOT (LANguage learning with CErtified Live Online Teachers) project has developed a course to train language teachers in making expert use of synchronous online tools. This will be published under a creative commons license in September 2007. The course structure combines three strands: technology, intercultural communicative competence and teaching methodology. At the same time, the LANCELOT course integrates synchronous and asynchronous elements. The course further addresses the importance of a combination of both teacher-led and trainee-driven activities and a methodology to integrate these activities.

As to be expected in our global world intercultural communication forms one of the three strands of LANCELOT guiding foreign language teachers to explore intercultural communicative competences. The components covered are knowledge, awareness, attitude, respect, interaction and role behaviour. The intercultural experiences between the participants of the LANCELOT programme are explored throughout the course.

Questions that are addressed in the technological strand of the LANCELOT course include: what kind of technology enables teachers to contact their students across continents? What role do asynchronous language learning tools play? What do language trainers need to know about the technology? Which competences are needed?

Language teaching and learning has also come a long way since the 1960s when the predominant ideas in learning were behaviourist and the accepted methodology was audio-lingual and a great deal of time was spent drilling grammatical rules. We now accept for the most part that learners need to make active uses of language in order to progress and that we need to take into account learners' needs and preferences as we create curricula. The use of real time technologies would seem on the surface to add a "missing" dimension to online language learning by bringing live elements into play. Making use of desktop video conferencing in virtual spaces enables learners to communicate with each other in ways that it has only been possible to do in conventional face-to-face settings until relatively recently.

The implications of this for language teachers who may be experienced in conventional face-to-face teaching and the configuration of a methodology component in an online course are considered in the LANCELOT methodology.

In the LANCELOT training course synchronous sessions in virtual classrooms are complemented by asynchronous information organised in an educational metadata-based learning management system. The metadata system is used to guide the production of content in the three strands and the conceptualisation of teaching and learning by teams from three different countries (Germany, Turkey and the United Kingdom). We will discuss how the different cultural teams influenced by tacit knowledge on teaching and learning, have employed the asynchronous educational metadata system differently, arranging the asynchronous training materials in diverse microstructures.

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## E-LEARNING WITH ROI – IT IS POSSIBLE!

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If you listen to the hype, e-Learning trains staff better and has a massive and rapid Return of Investment (ROI).

But how accurate is this? Bertrand Dory puts forward the theory that, when taken under the microscope, e-learning is not meeting these expectations. In fact, employees are often down-skilled as opposed to up-skilled and the massive ROI is but based on an often deliberate misuse of an ROI methodology.

Bertrand states that, at the heart of the e-Learning myth lies a restrictive calculation of real costs and investment together with assumption about learners' abilities and motivation to learn. In turn, accurate measurement of the didactic and financial success of the project is compromised if not lost.

Bertrand proposes that this does not have to be the case: with effective ROI definition at the onset and a linking of learning objectives to business impact, e-Learning projects can leverage considerably more benefits for employees as well as organizations.

Emerging Web 2.0 principles and tools enable new possibilities with the inclusion of social software. It enables the forming of communities and places the information and the knowledge in the centre. The potential of using this emerging trend and its potential impacts and benefits could be massive for the learners and the organizations. The lack of direct control and the self managing nature of communities, with their own principles based on trust, democratic rules, community based reputation and values. All of this does not cater for the need of the organizations as they cannot control and cannot put meaningless measures in place. For the learners, the benefits of being part of a social network, leveraging the social interaction and inherent collaboration, as well as the access to "context-relevant" knowledge and information will empower them and increase the efficiency of the learning, and also make their learning more relevant for them and for the organization.

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# ITALIAN E-LEARNING NETWORK SALUS.NET FOR DEVELOPMENT IN HEALTH

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## Introduction

E-learning represents an opportunity of development and growth of public health sector, because it consents a constant and contextualized development of human resource. New technologies supply new possibilities in delivering and spreading of learning contents for all the professions involved in healthcare. E-learning offers the possibility to train many users about specific topic in short time. But the implementation and application of the e-learning methodology into an organization requires time and money, and the more an organization trains employees, the more it reduces training costs per employer. Moreover e-learning is a complex system comprehending learning systems, human resources involved in, integration of the organizational processes in different contexts, content production and supplying, technological choices and standards, and didactical services.

## The context

One of the problems of e-learning in health is the absence of specific e-contents about health topics: there are no specific market and catalogues of e-learning courses in health and so every health department needs to create e-learning courses making this effort by itself. The absence of a specific market makes difficult to know even what is happening in the health sector, or which kind of products health institutions have, and so in some cases there can be the duplication, triplication and maybe more of e-learning stories and digital contents production between health departments in Italy. Azienda ULSS 8 in Asolo and Children's Hospital Bambino Gesù in Roma are at the moment two of the most dynamic examples in planning and management for e-learning activities in Italy, using common solutions for didactical, communicative and multimedia development, using several devices looking forward for blended solutions.

Not sufficient pushing of Italian courseware market, together with continuous research in most performing resources management; with the need of empowering experience, contents and successful didactical solutions disposable for other users; with the possibility of a more ambitious planning, counting on an elevated critical mass, induced these health institutions to promote the creation of the first Italian e-learning network. The e-Learning network is the consequence of a growing interest about e-learning in several Italian health departments, asking for solutions and successful experience to start with remote learning methodologies.

## Objectives

The aim of the e-Learning network is to create a virtual community which uses advantages of networking, such as the possibility of re-use and cost sharing of training products and offer more training products, such as common problem solving; in particular for such problems that no participating institution has already solved, and that the net offers the partners solution search. The e-Learning network will be then a virtual place hosting communities that can learn in cooperation, where users learn and share their knowledge with all the net community: the website Salus.net is the meeting point of all the participants of the network.

## Network structure

The network, which has no new legal institution, will promote e-learning activity of each member, and will consent the re-use of e-content, or to begin a partnership finalized to the auto-production and the new e-contents outsourcing supply. This network operates today with about 30.000 persons; the objective is to have a common place, in which the participating institutions have to publish their digital contents catalogue; moreover every institution has to verify the quality of its e-learning courses and contents. The presentation of the network took place officially in June 2006 in Venice, where delegates working in Italian health departments, hospitals, universities and other institutions decided to co-operate into the first Italian e-learning community.

## Conclusions

Such kind of cooperation between sanitary institutions offers the possibility to socialize the problem, thanks to the presence and the contribution of an institution that already solved the same problem; in the same way best practices can be socialized: the institution that wants to start with an e-learning project can adopt successful solutions, practices and systems of another institution; especially for starting realities network can contribute to solve some problems inherent cultural, organizational, technological and content production topic: in fact e-learning is seen more often as an alternative method rather than a complementation of the traditional class training.

# PEDAGOGIC DESIGN PRINCIPLES FOR VIDEO

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## Introduction

The paper summarises the video screenwriting principles espoused in the author's 2006 book "Designing video and multimedia for open and flexible learning." Thereby it gives an overview of how to design video to achieve its full learning potential. This involves careful interweaving of audio and images in order to achieve synergy between them – effective design principles for the words and the images together.

More generally, the aim of the design principles is to provide the best possible learning experience. This means structuring video material in such a way that, as far as possible, it pre-empts students' intellectual predicaments.

The principles for pedagogic screenwriting, summarised in the framework below, consist of three usage dimension (part a.) and ten screenwriting categories (part b.). The framework will be illustrated with a clip from a UK Open University video on the psychology of mathematical problem-solving. Participants will be supplied with a 6-page handout that includes a transcript of the video clip

## A pedagogic framework of design principles for video

a) How will the video be used?

By whom	A. TARGET AUDIENCE
In what context	B. LEARNING CONTEXT AND COMPLEMENTARY LEARNING
For what purpose	C. TEACHING INTENTIONS 1 Cognitive Learning Outcomes 2 Provision of Experiences 3 Nurturing (motivations, feelings)

Examples

Second-year undergraduates
Supplementary video notes
~ Argue a scientific theory. ~ Take viewers on a field trip. ~ Influence attitudes.

b) Pedagogic structure for each chapter

1.	HOOK
2.	SIGNPOST
3.	FACILITATE ATTENTIVE VIEWING
4.	ENABLE CONSTRUCTIVE LEARNING
5.	SENSITISE
6.	ELUCIDATE
7.	TEXTURE THE STORY
8.	REINFORCE
9.	CONSOLIDATE / CONCLUDE
10.	LINK

Examples

Shock close-up of moist human brain. Narration: <i>This is a real human brain</i>
Scene: four monkeys eating. Narration: <i>let's concentrate on social behaviour</i>
Presenter says: <i>helium in this balloon, carbon dioxide in that one. What will happen if I release the balloons?</i> (PAUSE)
e.g., don't blanket the shot with words – leave pauses for contemplation.
e.g., timely occurrence of music
e.g., uncluttered, simplifying graphics
e.g., vary mood, gravity
e.g., repetition from a different angle
e.g., summarise key features, helping viewers to stand back from the story
e.g., link each chapter to the next one

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## THE PRACTITIONER COMMUNITY AND ETHICAL PRACTICE IN ONLINE LEARNING

*Donna Harper, Petra Luck, Liverpool Hope University, UK*

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To date, research around ethics and on-line learning is found predominately in three areas: learning and teaching strategies, plagiarism and copyright issues. Russell (2005) argues that 'distancing has yet unexplored consequences in on-line learning'. As the ethical dimension and the distance factor is a much unexplored area – this paper begins to address that deficit and presents work that investigates the role of the practitioner community and ethical practice in online learning. The relationship between tutor/student and student/student to facilitate effective e-learning is examined in the light of ethical concerns. This paper seeks to discover if students are disadvantaged or alienated by the 'distance factor'. The study has as its focus the student experience and student attitude knowledge and skills who are learning and transferring knowledge and skills in an ethically and socially responsible early years sector (high touch/low tech) via on-line learning – which has been characterised by its distance and perceived reduced empathy.

The paper begins by presenting the context for the employment sector students are engaged in and provides background to the on-line course studied. The theoretical framework Pelz's (2004) model is proposed which provides a framework for analysis that constructs a holistic view of the students experience, by exploring experiences of on-line methods used and the more deeper issues of students experience as a 'person' within this process. However, for this paper, as outlined in the methodology, the framework used is Pelz's (2004) third principle 'Strive for Presence', where ethical issues affecting the student experience as a 'person' within the process, are identified and examined thorough the use of questionnaires. The results show that students that students raise no major ethical issues, but a significant minority raised issues such as the intensity of work online, the impersonality and tension of studying online while working in a 'high touch' profession.

The research shows that participants formed close relationships through studying online, this was enhanced by sharing a common professional context and the learning and teaching approach of Problem Based Learning.

The study found that students did not find themselves disadvantaged by the 'distance factor' of online learning.

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## 'NEW PROFESSIONALS', NEW TECHNOLOGIES, POLICY, PRACTICE AND SCHOLARSHIP IN NEW HIGHER EDUCATION

*Alison Hudson, Umeå University, Sweden*

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This paper is based on a research study investigating the roles and practices of 'new professionals' involved in supporting the advancement of teaching, learning within the changing university. The concept 'new professionals' was used at the start of the millennium to describe changing roles and role boundaries in a shifting balance from teaching to learning in higher education and in relation to serving the needs of re-formed institutions.

At a time when information and communication technologies and digital media are rapidly changing culture and society world-wide, and innovation, enterprise and reform are high on the agendas of many universities, the study focuses on the practices of two specific groupings of 'new professionals': staff who support academic development and staff who support the use of learning technology. Whilst identifying similar and complementary practices the study also identifies tensions, division and struggles in the field, thus raising fundamental questions about the concept 'new professional' and the relationship between academic development and practices which focus specifically on the use of new technologies in the changing university setting, for example:

- What is a 'new professional' in higher education?
- What characteristics, principles and practices distinguish support for academic development from support for new technologies?
- How do these practices relate to teaching, learning, scholarship and policy in higher education?
- Is the notion of a 'new professional' in higher education still applicable?

The study unravels some of the complexity associated with these 'new' areas of work and in doing so it identifies a number of critical issues such as seemingly continuous battles over epistemologies, struggles for power over resources, a change in the emphasis on social and cultural capital and the emergence of 'new' spaces and chasms in 'the field'.

The following overriding issues emerge as key areas for further consideration:

- the relationship between new technologies, policy and practice in the new higher education
- new ways of working, specialism, interdependence and collaboration
- the need to reconceptualise the notion of 'new professionals' and 'new scholarship', particularly in relation to the use of new technologies in the changing university.

This paper seeks to make a case for future policy in higher education to look towards scholarship and research-based practice, integrative working practices and structures based on interdependence and collaboration in underpinning future strategies.

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# METHODS AND TOOLS FOR DEVELOPING PERSONAL KNOWLEDGE MANAGEMENT SKILLS IN THE CONNECTIVIST ERA

*M. Chiara Pettenati, M. Elisabetta Cigognini, Fortunato Sorrentino, University of Florence, Italy*

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## Purpose of the work

In our contemporary society, the issues of teaching and learning are entwined with issues dealing with how we manage our personal knowledge (PKM, Personal Knowledge Management) using telematic technologies. The Knowledge Society requires everybody to acquire a set of PKM skills to become an aware user of the network affordances. Up to now, traditional education has considered to various extents the problem of taking advantage of telematic technologies to provide enhanced learning. Nonetheless, the issues of preparing students to properly master these technologies have not yet entered in the formal educational activities. Social networking tools and methods provide a tremendous opportunity and an appropriate context to seamlessly fill this gap. According to this perspective we provide a Reference Model to support educators in the planning and design of learning experiences. The Model applies to a networked environment oriented to the acquisition of specific PKM skills, those required to become "life-long learners in the knowledge society".

## PKM skills and skill acquisition in the Knowledge Society

We group PKM skills under three macro-competence categories, CREATE, ORGANIZE and SHARE. Each macro-competence is interpreted as the results of a number of PKM skills. **CREATE:** *Editing* (e.g., digital information creation in multimedia formats); *Integrating* (post-processing of recordings, digital annotations, automatic abstracting, etc.); *Correlating* (make connections, draw diagrams, mind maps); *Manage security issues* (manage privacy, IPRs, DRM, etc). **ORGANIZE:** *Retrieving* (searching, reading, managing cognitive overload etc); *Searching/finding*; *Storing* (deciding archiving media, considering resource availability and accessibility). *Categorizing/classifying* (defining relations among pieces, using folksonomies); *Evaluating* (extracting meaning, attribute relevance, affecting trust levels). **SHARE:** *Publishing* (present relevant information, using appropriate publication channels); *Mastering knowledge exchanges* (being concise, taking turns, focusing on topic, etc.); *Managing contacts* (keeping profiles, contact contexts and social network representation). *Relating* (establishing connections, communicating through new media; understanding peers, using different languages); *Collaborating* (sharing tasks, working to a common goal).

## Knowledge model supporting PKM skill acquisition

The Model presented, also in graphical form, is a four-stage model, depicting a set of stages through which, in our specific context, knowledge flows. Its purpose is to be a guideline to design learning activities able to develop PKM skills. **Stage 1: Awareness & receptivity:** individuals get used to "handling knowledge abundance" as they are for the first time confronted with resources and tools of the new learning habitat. **Stage 2: Making connections, selecting and filtering:** individuals begin to use tools and understanding acquired during the previous stage in order to create and give shape to a "personal network" of resources (people and contents). **Stage 3: Contribution & involvement:** the learner begins to actively contribute to the learning network – essentially, becoming a "visible node" and allowing other nodes on the network to acknowledge his resources, contributions, and ideas – creating reciprocal relationships and shared understandings. **Stage 4: Reflection & metacognition:** Reflection on the knowledge processes and products, self-reflexivity and self-evaluation as well as metacognition (thinking about thinking) play a prominent role in this stage. The subject is able to act both as a provider of valuable support to other networked learners as well as being capable of accessing just-in-time and personalized knowledge for himself.

As a conclusion, in order to link Learning Design and Web 2.0 technologies and opportunities we have developed a map charting the relationship between PKM Skills and Social Networking technologies. To this purpose we also present a detailed example scenario where a class of students challenged in a collaborative and creative task effectively enact the four stages of our Knowledge Flow model.

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## MEASURING E-LEARNING EFFECTIVENESS IN HYBRID COURSES: A CASE REPORT

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Distance education is a form of education that has a long history that started with correspondence studies, then via television and has been changing ever since. With the increasing popularity of computers and access to the Internet, the focus of distance education programs turned to this media. Since then, there have been a number of computer programs, known as Learning Manager Systems, whose objective is to ease the distribution of distance courses. These programs also make available communication tools (both synchronous and asynchronous) and manage student activity throughout the course. To many people and institutions, this started a revolution in the educational scenario. To others, the more cautious ones, cyberspace opens a new world of possibilities to be explored and this demands much more than fancy solutions using computers. In the last years we have been conducting a research project whose objective is to develop a methodology for using distance education as a means of supporting undergraduate students' learning. In the first phase of our research project, we emphasized the creation of a learning environment which took into consideration, among other aspects, the adaptation of contents to cyberspace. Initially, we tried to understand the role of the interface and, then, we explored the specific cyberspace mechanisms that play a role in the interaction between user and environment. The aims of this article are to report on the process of creation of a graphic interface model for our virtual learning environment and to review the results of our experiences in the use of the environment with undergraduate students. The article supports the argument that the quality of the implementation process in the model can be better assured when there exists coherence between graphic and pedagogical proposals. In addition, the graphic treatment is considered to be one of the most relevant aspects vis-a-vis the interaction level and user-friendliness that the environment will establish with the student. The experience was applied in two classes of undergraduate engineering students, with a total of 75 students, and the discipline Structural Analysis. In both classes the professor was the same. Each class was divided in two groups, one with the students who visited the web contents satisfactorily and a second group with the students who did it not. The results clearly showed a better performance for the students who visited the web contents satisfactorily in comparison with the students who did it not. We also compared the same groups in another discipline (Physics II) to observe the performance between the groups of students. In this second discipline the students had no access to any virtual learning environment. The results showed us that in this case there was no difference of performance between the two groups. The comparison between results in both disciplines reinforces the idea that the model here presented really has an impact on student's learning. However, one should be alert to the fact that these are preliminary results and several other experiments must still be conducted to prove the efficiency of the proposed pedagogical model.

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# NARRATIVE BASED E-LEARNING IN AN EVIDENCE BASED WORLD AN APPLICATION TO TEACHING MEDICAL STATISTICS

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## Introduction

The present paper describes e-CNA (e-Collaborative Narrative Analysis) which is a module of MEANINGS an interactive system of web based applications aimed to co-construct the meanings of several concepts by means of words associations, semantic differentials, emotions-cognition relationships, and so on. e-CNA can be considered as a multi-agent methodology where different agents contribute to the exploration and co-construction of the meanings of a set of narratives from different points of view. The present paper describes an e-learning experiment aimed to combine the qualitative and the quantitative approaches, and in particular to use Illness Narratives for teaching medical statistics, and Medical Statistics for teaching illness narratives.

## Methodology

The students of the courses of Medical and Nursing Statistics and Informatics (respectively, 270 and 60 students) of Faculty of Medicine of the University of the Naples "Federico II" were involved in an Illness Narrative Evidence Based e-learning project. Two prototypical illness narratives were videotaped and de-structured into different sub-themes. The corresponding video-clips were uploaded onto the website. A multi-professional virtual classroom was set up by means of the e-learning system Dynamical Virtual Learning Networks (DVLN, <http://elearning.medicina.unina.it/dvln>). Then, the transcripts of the two interviews were uploaded onto DVLN as simple texts. The relationships between the quantitative (i.e. statistics) and the qualitative (i.e. illness narratives) approaches were introduced in a vis-à-vis multidisciplinary plenary seminars, and were discussed according to a double feedback model linking clinical diagnoses and the production of statistical information. Different themes were sequentially drawn from the narrative in order to trigger the interest of students in classical statistical issues. Each student was invited to conduct a non directive audio-taped interview with a real non hospitalised patient, to transcript it according to the learned rules, and to download the transcript on MEANINGS as a textual document. e-CNA (<http://elearning.medicina.unina.it/associazioni>) was used for the web-based collaborative analysis of the downloaded narratives.

## Results

A repository of 319 illness narratives was obtained. The CNA process can be carried out in different phases. The "Narrative de-construction (ND)" module is aimed to disaggregate a given narrative into small sequentially numbered meaning units (MU), each MU being a sentence or a sub-sentence which points to particular aspect of the narrative. The second phase is aimed to code, group and comment the MU in order to generate a set of *themes*. The interpretation of the MUs can be carried out in two different and complementary ways. The user can select and codify subsets of MUs. Each subset is a *Theme*. The participants can either choose the codes from a predefined list or enter a new code which is then added to the list of predefined codes. Two typologies of external links can be selected: *Evidence Based Links* point to the "scientific" literature, and *Narrative Based Links* point to narrative issues

The participants can also generate a *semantic network* by defining a set of *internal links* by associating couples of themes of the same and/or different narratives. A logical relation among the two chosen themes (e.g. cause-effect, is-a, and so on) can be defined. The repository of Illness Narratives can be analysed statistically in order to grasp some insight into similarities and dissimilarities among different narratives. Also, the differences between the students of different courses and/or between different professionals can be studied. A graph based structural analysis can be generated also by means of DKN (Dynamic Knowledge Networks) a tool for exploring the semantic network of each narrative and displaying it as network of nodes.

## Discussion

e-CNA is an attempt to embed quantitative and formal reasoning into qualitative reasoning. So, in principle, e-CNA could be applied to several domains and contexts also as a means for overcoming the separation between the "humanistic" and the "scientific" side of human knowledge.

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# AN ATTEMPT HOW TO DEFINE TYPE OF LEARNERS BY HELP OF COGNITIVE STYLE

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## Preamble

There has been an increased growth in the use of e-learning tools in education. However, much remains to be learned about how different learners perceive such systems. Therefore, it is essential to build robust learning models to illustrate how e-learning features are experienced by different learners. Research on individual differences suggests that cognitive styles have significant effect on student learning in e-learning systems. Cognitive styles play important role in the development of hypermedia-based learning because they refer to users' information processing habits, and they represent individual users' typical modes of perceiving, thinking, remembering, and problem solving. People also exhibit significant individual differences in the cognitive processing, problem solving and decision-making styles and activities. While adapting to the world people apply certain procedures. These procedures named ego-controls. Adequacy of the ego-controls influences the perception. The perceptual attitudes are one of the adaptational requirements for ego personal outlook. The result of the method by which people sense the world is never similar to the original stimulus which reaches our organs.

## Research methodology

In the examination we used five questionnaires. Personal Style Inventory (PSI), Silverman - Felder Learning Styles Inventory, Kirton Adaption – Innovation Inventory, questionnaire of attitude towards e-learning and a Cognitive style Inventory which was developed by ourselves. Our Cognitive Style Inventory measured four cognitive style dimensions: **analytic – holistic dimension, field dependence and independence, sharpening and levelling and tolerance for ambiguity**. Besides questionnaires we used *electronic log-utilities* to measure learners' activity during e-learning. On the basis of theoretical knowledge we hypothesised two dimensions of learning type: visual – verbal and holistic – analytic types.

We carried out the research with students of Corvinus University of Budapest during the first semester of the academic year 2006/2007. They studied a subject entitled "Theory of psychology" on lectures and seminars that we used for consultation about e-learning. We examined 160 students.

## Results

To identify learning types we made statistical methods with the help of SPSS. We made cluster and principal component analyses. However the results have not supported our hypothesised learner-types, there were no differences in usage of e-learning material according to the results of log-file-analysis. So we have to say, that we were not able to classify the supposed Riding's types. At this moment we made other statistical procedures as well. As a result of this research we analyzed two types of learners: analytic, holistic types.

**The analytical type of learners** is active and experiences-oriented in e-learning. These learners are field dependent, analytical, sensitive people. They rather have intuitive and visual learning style. A curriculum rich in visual and verbal units is suitable for this type. They like possibilities and exercises that require analyses. Simulations, models, videos help them understand and comprehend the curriculum. Possibility to annotate and rearrange the curriculum by their own principle is also helpful for them.

**The holistic type of learners** is more active. They make effort to get to know the subject as a whole. They have innovative, extrovert, intuitive and sharpening and holistic cognitive styles. They tolerate ambiguity and they have global, reflective learning style. A curriculum linking up memorized units and parts of curriculum is more suitable for the holistic type. This type likes connecting parts together, prefers experiences, particular cases and exercises (compilation, thesaurus, collection of curiosity, suggested reading) which have effects on their emotional and motivational systems. The features of the contents are also crucial for this type to comprehend the curriculum as a whole.

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# USER CENTERED DESIGN IN E-LEARNING ENVIRONMENTS: FROM USABILITY TO LEARNER EXPERIENCE

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## User-centered design as a process to design successful e-learning environments

As e-learning systems grow and more people are accessing them, it is necessary to consider the diverse needs and characteristics that different users have when designing virtual environments. This allows building systems that people can use easily, efficiently and effectively, where the learning process leads to a good user experience and becomes a good learning experience.

User-Centered Design (UCD) is a design philosophy and a process in which the needs, wants and limitations of the end user of a product are the focus of each stage of the design process. Focusing on user perceptions, feelings and interactions with the system, user experience is included in UCD.

This presentation describes the application of a UCD process to the development of a virtual classroom. The classroom re-design project is part of the Campus project, which aims to develop a higher educational platform in open source software. Three aspects characterize this project: the virtual campus will support up to 10,000 simultaneous connections, the product design follows a UCD approach, thus including the principles of ISO 13407, and the user interface will comply with usability, accessibility and e-learning principles and standards.

## The case of the re-design of the virtual classroom

One of the goals of the virtual classroom re-design project is to prove that by applying UCD in an e-learning environment we can develop a learner-centered design process that ensures the quality of the developed products and guarantees a good learner experience. The project has been developed at the Universitat Oberta de Catalunya (UOC, in English the Open University of Catalonia), a completely online university with more than 40,000 students and more than 2,500 staff.

The UOC virtual campus is an integrated e-learning environment based on a student centered pedagogical model. The new virtual classroom is a key element of the environment and we have used its redesign to apply our UCD approach, more specifically the user testing and prototyping phase. Working with an interdisciplinary team, we have analyzed and designed according to the needs and desired improvements of students, faculty and administrative staff.

The project started in September 2005 with the user requirements phase and was followed by an iterative design and evaluation of prototypes. Five pilot classrooms were launched during the Fall semester 2006 to evaluate the redesign in a real virtual learning environment. By following this approach, we have gathered enough information to know that we are moving in the direction desired by students and faculty. Moreover, the project has provided us with enough information to begin constructing a learner-centered design model that considers the specificities of our users: they use the system for a specific goal: to learn. This model facilitates the identification of the elements that help us design better and create positive learner experiences for our students.

## Building the learner experience

We are aware that building the learner experience is an iterative process, where in each step designs are improved. At present we are working on a more deep change both in terms of design and content organization to implement a second set of pilots for next semesters. We are aware that it will require a learning process for students but we also know that the end product will answer their needs; therefore this process will be perceived positively, thus as a learner experience improvement.

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# LECTURER PERCEPTION OF THE EFFECTIVENESS OF BLENDED LEARNING AND INSTITUTIONAL SUPPORT MECHANISMS

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## Introduction

The development of the e-learning project at Bergamo University in Northern Italy aims to offer its students a support to their classroom lecturers, with the intention of improving their learning experience to enhance teaching that is more active and collaborative. The project has been in place since 2000 and has steadily been growing throughout the University since then. Previous studies into the University's student population have demonstrated that they tend to live locally and desire some face to face contact with the lecturer. However as times change so do other necessities. More use of ICT, greater student numbers, more demands on time all mean that the staff at the University felt that it was important to offer something different to traditional classroom lectures in order to enhance their students' educational experience. Thus the e-learning project within the University has tended towards the blended e-learning model.

Quality issues are always paramount when delivering University courses and the University felt that it was vital to assess lecturer experience in the e-learning field in order to establish what their particular needs are, especially with a view to quality control and the use of resources. It was decided to undertake a research project into staff perception of the effectiveness of blended learning in order to ascertain exactly how lecturers view this new method of communication and whether they feel that the extra materials provided by them in an online environment influenced the students in any way. In effect how useful is an online environment when the bulk of the course is delivered face to face? Do lecturers feel that the support mechanisms they need are enough to establish and deliver materials through an online environment? What are the implications for the resources invested into e-learning for the university?

## Methodology

Research has been going on throughout this academic year with teaching staff at the University of Bergamo who offer their modules in Blended Learning mode. Staff are located in all the faculties of the University: Economics and Business Administration, Engineering, Arts, Law and Foreign Languages and Literature. Interviews that lasted between 40 minutes and 1 hour were conducted with staff and were composed of open ended questions. The interview questions were broadly divided into three categories: 1) lecturer satisfaction with their role in the online environment, whether they felt that the use of online materials was justified and whether they felt that the students interacted more 2) whether the online materials influenced their classroom teaching and whether they perceived any difference in students' attitudes or learning and 3) support mechanisms: whether they felt that they were properly supported both from a technical and didactic point of view. The researcher also had access to courses in order to get a more complete picture of what was offered by the lecturer and how the students participated. The purpose of the interviews was twofold. Firstly we wanted to assess staff satisfaction with their blended learning modules, that is how effective they felt the online part of the modules taught was in the context of their overall course and whether they felt that the students truly used and benefited from the materials offered to them online; and secondly whether lecturers felt that the technology and support mechanisms available to them were sufficient.

## Results

After the interviews were analysed, there appeared to be three broad categories of lecturer-user of the online environment: the low end user, the expert user, the enthusiastic novice.

## Conclusion

From this preliminary research into lecturer perceptions into their use and effectiveness in blended learning, some conclusions can be drawn:

- Support should be targeted, that is, specific issues such as large group teaching should be addressed, perhaps through workshops.
- The use of e-learning champions in faculties could facilitate access for both the novice and the experienced user.
- Localised support for novice users can be a highly effective tool. Lecturers who are reluctant to use an online environment within their modules may prefer to have more specific support from the University in order to allow them to make the first step in approaching the web.

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## THE ABI ONLINE SIMULATION "BANK ROBBERIES": AN INNOVATIVE INSTRUMENT FOR THE ROBBERY RISK MANAGEMENT IN THE ITALIAN BANKING SYSTEM

*Gaetano Bruno Ronsivalle, ABI, ABI Servizi, ABIFORMAZIONE, Italy*

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When addressing robbery risk, essential activities involve raising awareness and training on preventive strategies and defence against the criminal offence.

Training is considered one of the best ways to ensure that bank employees know how to deal appropriately with robberies.

In this perspective, in order to strengthen the process of identification and subjective immersion, ABI experts and instructional designers, experts on probabilistic networks, in conjunction with the experts in multimedia techniques and languages of ABIFORMAZIONE, have joined forces to develop a learning system centered around an "online simulation".

The "Bank Robberies" simulation immerses the operator in a situation that reflects to the greatest extent possible what can happen during a real robbery. The aim is to provide the experience of a robbery within a "protected" environment and to allow reflection on this experience, preferably in a training context.

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## RESEARCHING STUDENT MOBILITY IN A DIGITAL WORLD

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The higher education institutions of Europe are evolving new ways of working to continue to offer high quality advanced education, as some have done for several hundreds of years. They are adapting their courses and methods of teaching, to support diverse learners who seek to gain advanced education in high quality settings, wherever these are to be found. Over the past decade students have become more adept and frequent users of ICT for social and academic purposes, and most are now heavily reliant on technology. They are also increasingly mobile, with more students studying at other universities for part of their degrees, often supported by the European Erasmus Programme. One consequence of these changes is that the diversity in practices in European universities now extends to their provision of ICT-based services to students, and these can be offered to them before they undertake a study visit, during that visit or continue afterwards. Examples of such important student services includes remote online registration (matriculation), information websites in multiple languages, e-journals, PCs, email and VLEs for study during a visit and access prolonged afterwards, automatic transfer of course credits and transcripts, maintained support by email to students whilst studying away from the home university.

Although these services can be explored from the viewpoint of physical student exchanges, they can also be seen as the underpinnings for large scale virtual mobility (VM), because the extent to which universities can manage automatically and with ease digital services for visiting students, they may also be able to do this for students who only visit digitally. To the extent that they have difficulties with this provision, they may also not be ready for significant VM and still reliant on out-of-date or 'handcrafted' solutions. We set out to explore the experiences of current mobile students, travelling to study at universities in other European countries, with respect to what services they were offered and the quality, and also their expectations of such services. In parallel we surveyed universities, asking them to tell us about their provision, as well as testing some options for services in this area in our own universities. A full report of our findings is available at [www.victorious-project.org](http://www.victorious-project.org)

The surveys and interviews gave us a good insight into the variety of issues that arise for students who are mobile in their place of study and indicated the variety that exists across European higher education in digital services both in terms of what universities provide for learners on- and off-campus and also in the extent to which they reach out to students before they arrive and after they leave. It appears that some key services, such as course choice and enrolment and the library, are still very oriented towards physical presence as the way to provide registration and authentication information, which of course is not possible in VM as the student will never attend the university. Some universities do not view visiting students as equivalent to their own students in access to materials and services, and even for some of those that do, their provision of good information in a well-structured way and in accessible language is limited or non-existent.

The picture is not all negative however. There are signs that the 'pathfinders' in this area are not a small minority, and that as most universities now have plentiful ICT use in learning and teaching, this experience will be used to help support use of ICT in other business areas. Another hopeful sign is that many of the university respondents reported that they had VM in pilot form and others reported that they were aware but not yet acted. Only a few said this was something they had not yet thought about. Even allowing for some self-selection in the participants, this suggests that there is a readiness in the universities of Europe to engage with this agenda. The students' respondents were very ICT aware, substantiating earlier studies, and they use ICT regularly in their social lives and studies. Nevertheless they are not fully proficient in learning with ICT, or in adapting to its use at another university, and require help to smooth their path. Thus preparation of students for visits, and support whilst they study away is a valuable service. There was lack of clarity about support, and VM will further blur the boundaries of 'whose student is whose, and when, and who provides support, and for what'. The lack of IT support reported by a significant number of students in surveys and interviews suggests that this area is in particular need of attention.

Finally, some of the students' problems could be addressed or at least simplified at national or European levels, through such initiatives as central databases of course information, digital identity sharing, roaming network access and enhanced access to bibliographic resources through a virtual European digital library.

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## ONLINE TEACHING: WHY DO THEY BOTHER? IT DEPENDS...

*Peter Shea, University at Albany, State University of New York, USA*

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This paper reports on initial findings from a research study of factors that appear to enable and constrain faculty participation in online teaching and learning environments. The study identifies faculty acceptance of online teaching as a critical component for future growth to meet demand for online education and to ensure quality. Through analysis of data from more than 800 faculty teaching online in 36 colleges in a two state university systems, the most significant factors that support and undermine motivation to teach online are identified. The top motivator was a more flexible work schedule. The top de-motivator was inadequate compensation for perceived greater work than for traditionally delivered courses, especially for online course development, revision, and teaching. However, these faculties chose to teach online for a wide variety of reasons many of which appear associated with demographic and contextual differences. Factor analysis of results also indicated an interpretable factor structure of motivators and de-motivators.

To achieve the goals of this year-long study we employed multiple methodologies from both qualitative and quantitative research paradigms. These included structured focus groups, and surveys of faculty teaching in both the State University of New York Learning Network and the New Jersey Institute of Technology (NJIT). This study was carried out at these two quite different institutions in order to get some idea about how much variation in both motivators and de-motivators is associated with institutional context. In addition, it was necessary to establish the extent to which the instruments and methods used could be applied in different university settings.

The focus groups allowed us to gain insight that cannot easily be gained from survey data – information that can follow-up on and explore beyond static survey items. On the other hand we used surveys to collect quantitative and narrative data from a broad segment of online instructors that would not have been practical using interview techniques. We analyzed this data using a variety of approaches. For the purpose of assembling a “top ten” list of reasons that faculty choose to teach online we therefore have several different perspectives. Through the use of the structured group interviews we purposely had faculty discuss and then “rate” the importance of a variety of motivators and de-motivators for online teaching. The results of many hours of such interviews are a set of motivational and de-motivational factors ranked from most to least important. Using the numeric survey data we were able to analyze responses from a purposive sample of more than 800 online instructors and determine which of a set of more than fifty different potential advantages and disadvantages they rated most and least important in the choice to teach online. Finally, through the analysis of open-ended narrative questions in the survey we identified and ranked the key themes most frequently occurring in the unstructured data that shed light on the decision to teach in ALNs. In each of these data sets we also have important information about the downsides of online instruction which provides insight as to why faculty may resist online education. Summary results reflecting the fifty motivators and de-motivators for online teaching identified through factor analysis are presented below:

<b>Motivators</b>	N	Minimum	Maximum	Mean	Std. Deviation
Personal Incentives	864	1.00	8.00	4.8478	2.02336
Teaching Advantages	864	1.00	8.00	5.4807	1.32305
Convenience	866	1.00	8.00	5.5384	1.64766
<b>De-motivators</b>	N	Minimum	Maximum	Mean	Std. Deviation
Institutional Recognition/Reputation Concerns	812	1.00	8.00	3.4919	1.83706
Teaching Disadvantages	812	1.00	8.00	3.9598	1.94849
Compensation/Time Concerns	812	1.00	8.00	4.1764	1.97926

*Motivator Scale = 1-7 from least motivating to most motivating*

*De-motivator Scale = 1-7 from least de-motivating to most de-motivating*

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# ICT INTEGRATION STRATEGIES IN HIGHER EDUCATION INSTITUTIONS

*Pearse Murphy, Athlone Institute of Technology, Ireland*

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## Strategic Planning

After World War II, much literature emerged on the topic of strategic planning. This was in the main driven by the demand for mass-industrialization after the destruction of war. This literature engaged with topics ranging from 'SWOT' analysis through to complex discourses on subjects such as 'systems thinking' and 'organizational learning'. This paper will briefly examine a particular aspect of the integration of Information and Communications Technology (ICT) into Teaching Learning & Assessment (TL&A) in Higher Education, around the subject of strategic planning.

## Systems Thinking

Systems thinking, occurs where the primacy of the whole is acknowledged in synergy with the efforts of the individual. In an analysis of strategic focus on the integration ICT into TL&A in the higher education institution, we should endeavour to measure whether individuals or groups are in tune with the part they play in the overall strategic plan of the organization. ICT strategic planning for TL&A can also be viewed from the aspect of its synergies horizontally within the strategic plans of other departments and functional areas, such as teaching and learning units and computer services.

## Organizational Learning

In a fluid environment, such as that presented by systemic integration of ICT into TL&A, strategic development should be evidence rather than opinion based in order to ensure organizational learning. This type of behaviour is associated with 'double-loop' or 'deutero' learning in the literature. This model of organizational learning refers to the organizational capacity to set and solve problems and to design and redesign strategies, policies, structures, and techniques in the face of constantly changing assumptions about self and the environment. This type of approach may be suitable to the systemic integration of ICT into TL&A, where massive change and paradigm shifts predominate. Unfortunately empirical studies to date, on the integration of ICT into TL&A, reveal evidence of a 'one-dimensional' or 'single-loop' approaches where, although ICT systems have been widely adopted into TL&A there was little or no change to the pedagogical model and little effort was applied to how ICT might improve learning methods or outcomes. Some experts refer to a missed opportunity here which advises where ICT is pedagogically integrated into course design for TL&A it can enable and support enhanced forms of learning and perhaps pave the way for student centered learning.

## Conclusion

In the literature overall it is quite difficult to find a model which encompasses the measuring of effective strategic planning initiatives in relation to the successful systemic integration of ICT into TL&A. This may of course be because of the newness of the topic and lack of empirical case studies available for analysis to-date. There is a possibility however, that a framework might emerge to allow such measurement, by further exploring the discourse into 'organizational learning' and 'systems thinking', from the perspective of the individual, through the group and onto the organizational level.

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## PEER REVIEW SERVICE FOR EUROPEAN TRADITIONAL UNIVERSITIES TO SUCCESSFULLY EVALUATE E-LEARNING

*M. Begoña Arenas Romero, Scienter España, Isabel Pérez, University of Granada, Spain*

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### Introduction: Our approach

Since the Lisbon strategy pointed at **e-Learning** as a **key element for higher education**, universities have taken many steps to put this idea forward. These steps have consisted not only in single University initiatives aiming at the creation of virtual environments, but their involvement in cooperation projects and activities promoted by the main networks and Associations towards the integration of e-learning in their education provision.

Many projects have proposed and/or documented approaches and strategies to integrate e-learning in Higher Education. However, the adoption of e-Learning strategies by "traditional" universities does not only need to integrate pedagogic or technologic approaches onto their strategies but to provide a set of support services that will facilitate their integration into the University provision.

Thus, the aim of MASSIVE (Modelling Advice and Support Services to Integrate the Virtual Component in Higher Education) has been to **design a non commercial model of mutual support services for European traditional universities to effectively compare and improve the integration of ICT into their teaching**. This service is based on a peer review approach incorporating a benchmarking methodology developed in the project.

### The peer review model

Educational peer review typically focuses on 'instructional events' occurring during delivery that should be critiqued by knowledgeable colleagues, including: 'settings' where teaching takes place and other physical factors affecting delivery; pedagogic procedures; use of language to inform, explain, persuade, and motivate; roles played by teacher and students as they interact; structure of the curriculum and interaction between different parts of it; learning outcomes. (Hart, 1987). In the context of MASSIVE, these 'generic' elements need to be linked to the particular features of 'virtual' learning settings.

The **purpose of the Peer Review exercise** developed in MASSIVE **has been to explore**, together with colleagues in participating universities, the **development, relevance and effectiveness of e-learning integration** in up to six aspects of the use of e-learning within the university. These aspects or areas are: University strategies in the integration of ICT in teaching & learning; Evolution of university libraries in their support of e-learning; Management of IPR of digital learning materials; Support for teaching staff in their use of e-learning; Support for students for e-learning and Design of online courses.

The Peer Review has a **predominantly 'analytical' purpose: to critically review the service models and approaches in participating universities**. The peer review process will take place in three phases: **A Preparatory stage** (countdown: one month before the visit) – this will entail gathering background information about an institution, and its current and future planned use of e-learning; **A site visit stage** (2 working days) – which will involve a collaborative dialogue between the peer reviewers and a range of representatives of the University; and an **Analysis and Reporting stage** (one month after the visit) – on the basis of the data gathered from the preceding stages, this final part of the Review process will focus on the production of recommendations through collaborative reflection between the peer review team and the hosting institution.

Based on the methodology described above, the MASSIVE consortium developed a service that is now available for all the universities that wish to use it. Part of the service includes a Peer review tool kit that is available for free at: <http://www.massive-project.org/>

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# HOW DO LECTURERS INTEGRATE THE WEB IN THEIR COURSES? WEB-SUPPORTED COURSES AT TEL-AVIV UNIVERSITY

*Anat Shemla, Rafi Nachmias, Tel-Aviv University, Israel*

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## Introduction

One recent innovation in higher education has been the rapid integration of the Internet into academic instruction. The web's potential impact on educational processes include: new pedagogical approaches based on unique features of the technology; improved information-organization, representation, and handling capabilities; enhanced communication among students and teachers, and support for collaborative learning (Mioduser & Nachmias, 2002). Currently, an extremely large number of lecturers at universities worldwide are exploring this potential in their academic courses (Allen & Seaman, 2004; Bonk & Graham, 2006; Harasim, 2000). Since most academic instructions are not in a distance learning mode, in traditional universities web is most frequently used by way of augmenting traditional instruction with supporting course websites. The pace of growth of course websites, the variability in scope and quality of their pedagogical use, as well as the gap between expectations and reality, raise the need for a systematic mapping of course websites. Currently, after almost ten years of exploration, the research literature is full of "success stories" and case studies, but lacks quantitative, systematic, empirical research regarding the usage of web pedagogies (Bonk et al., 1999; Harasim, 2000; Nachmias, 2002; Phipps & Merisotis, 1999). Consequently, this research aims to identify, classify and quantify the evolving use of web pedagogies on course websites by lecturers in a traditional university.

## Method

Tel-Aviv University (TAU), which served as the field of this research, is one of the largest research-oriented universities in Israel. The Virtual TAU project (<http://virtual.tau.ac.il>) was launched in the academic year 2000/01, aimed to initiate and stimulate a process by which more faculty members would gradually come to use the Internet to enrich prevailing learning processes and to make instruction more efficient and flexible. No pre-designed pedagogical solution is imposed, rather, each instructor acts according to his or her own pedagogical approach.

At the end of the autumn semester of the 2002/3 academic year, 607 course websites were created and implemented by lecturers within the Virtual TAU framework. Of these websites, a random sample of 202 websites was selected (about one third of all websites). This sample represents all Tel-Aviv University academic units. These 202 course websites were analyzed according to the course website characterization scheme and the results of this characterization, reflecting the current state of the websites usage, will be presented at the conference.

## Discussion

The results reveal limited pedagogical range of the implemented activities. Most lecturers are predominantly content oriented as yet – they think of course websites as content providers rather than communication facilitators. As a result, most website courses are used as a large virtual library, and only a small part of them is used as asynchronous learning networks (ALNs). Only few courses encourage interaction among participants (e.g., discussion groups, debates, role play) and collaborative learning. Most of the activities were based on individual query and exploration, indicating either pre-novel usage or lack of pedagogical need. The realization of the web's potential was limited as well. Total flexibility in learning time and space was hardly achieved. None of the lecturers (in our sample) did create fully on-line courses and very few gave up actual meetings in classes. In the vast majority of the courses, all web activities were additional to the classes, and in some cases they increased the workload of both students and instructors.

Other not yet realized potentials that are related to the representational means and hyperlinks. However, lecturers avoided to realize the pedagogical advantage of enriching the learning materials in a multi-sensory way. Similarly, our research showed poor results concerning interaction on the course websites. Although the research literature suggests high expectations on increasing interaction between participants, this study shows that most interaction was between students with software and learning materials. Collaboration and peer interaction were rare. From the above we can conclude that Internet integration at Tel Aviv University remains in a transitional phase characterized by the implementation of traditional pedagogical solutions by means of the new technologies. For greater transformation of

teaching and learning to occur, most lecturers need appropriate support to make the conceptual shift towards the generation of more sound technology-based learning activities.

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## MOBILITY NEEDS QUALITY AND VISIBILITY

*Eva Seiler Schiedt, Mandy Schiefner, University of Zurich, Switzerland*

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### E-Learning and Mobility

Teaching and learning in Higher Education is situated actually at the intersection of three different evolutionary dynamics: firstly, the restructuring of curricula and study courses called the Bologna Process, secondly the sustainable implementation of e-Learning in learning and teaching in Higher Education and thirdly the ongoing process of quality management and quality development. These three processes supplement and underpin each other mutually. The quality of teaching and research is influencing the students' mobility and thus important for institutions to gain the best Master and PhD students. Students can select their study place nearly without restrictions and this will produce a national and international stress of competition among universities. The criteria for choice are multifaceted: the life quality of a town, the renown of the university, or of a single professor, the possibility of research, the main area of research of a department, and so on. Our hypothesis is that the quality of a university in research and teaching becomes a main criterion for their choice and that e-Learning supports both quality and visibility especially of teaching. So there is an interrelation between Bologna, quality development and e-Learning. Bologna increases the mobility among students, e-Learning visualises the teaching and research of a university and motivates mobility. And: similarities call for differentiation through quality.

### E-Learning and Quality Management

Most of the participants in e-Learning projects at the University of Zurich dispose of a varied experience in evaluation and quality management of their materials and tools during the funding by the SVC (Swiss Virtual Campus, a national program for introducing e-Learning in universities). In e-Learning, formative evaluations during project development and summative evaluation of the products have been implemented in a wide range. Quantitative questionnaires, qualitative interviews and observation can now be adopted by general university evaluations. Thereby it is wise to reuse or modify this evaluation instruments instead of developing them again from the scratch, which is time-consuming. This means that evaluation of e-Learning can be seen as motor for quality development in teaching in general, which provides a new connection between evaluation, research and teaching. So, this quality development has not only impact for the e-Learning products, but for the whole organisation. Quality development and e-Learning interact positively and strengthen each other (Ehlers 2005): on one hand, quality will be promoted by e-Learning, i.e. there will be changes in organisational culture, access to education and learning resources, participation and design of an information society, an improvement of digital competencies, and so on. On the other hand, there are quality requirements for high quality e-Learning, i.e. e-Learning itself is in focus of the quality management.

The implementation of e-Learning at the University of Zurich mainly focuses the quality development of teaching and the professionalism of their lecturers, but also the flexibility of teaching and learning. Improvement of teaching with e-Learning means both better mentoring of students and improved interaction as well as a more flexible organisation of studies. Seen from a structural perspective quality development and quality management are organised at the level institutional support by an quality-development cycle, learners by teaching evaluations, content by project funding and faculty by further education of teachers.

### Summary

With the increasing mobility universities will compete with each other for the best Master and PhD students nearly worldwide. Different arrangements of quality improvement on different levels result in high quality teaching, which is a decisive factor for ambitious students to apply for studying at their university of choice. High quality teaching leads to the attractiveness of a university in the international competition of Higher Education institutions. E-Learning can be considered as a relevant factor for excellence and visibility. The open content and open access initiatives efficiently increase the visibility of a university. Quality management in the field of e-Teaching and e-Learning as well as in the classroom therefore is crucial.

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## APPLYING ICT FOR INFORMAL LEARNING AT UNIVERSITIES

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How are students able to learn successfully if they do not use university's learning offers (like courses and guidance) in the intended way? The answer might be rather simple: informal learning accounts for the bigger part of learning outcomes. University courses, as part of the formal learning hemisphere, are certainly essential for teachers and students. But formal learning needs a rather high input (of time and stress) for a rather poor output (of learning outcomes), while informal learning results in a considerably higher output by clearly lower input. This argument has a lot of relevance for academic education and matches what many of our students tell us. But how do students really spend their time if they are learning effectively? A brief questioning at TU Wien (approximately 40 students and 5 teachers) identified a number of scenarios of informal learning described and analysed in this paper.

### Examples of Informal Learning at the Vienna University of Technology (TU Wien)

There are some completely informal learning scenarios like the "Library" (physical) and the "Informatik-Forum" or "Google Docs" or "Skype" (virtual). The "Library" at TU Wien provides 10 tables for 6 to 8 persons each in one room for retreat – but in an official and public environment. Students can talk undisturbed in small groups, but simultaneously have the chance to contact anybody else in the room (up to 100 persons) and to use the technical facilities of a modern library. The "Informatik-Forum" is an internet forum run by students of computer science at TUW. It is open to everybody for reading but one has to register for writing. Registered users stay anonymous – only known by their nickname. Every topic is allowed, but there are specific threads for different kinds of topics, e.g. computer science in general, individual courses, and student life. Semi-formal learning scenarios like "Tandem language learning" (<http://www.ai.tuwien.ac.at/int/tandem.html>) and "Tutorial programmes" complete the sample. The first is a learning project which combines two learners of different languages to learn with each other and from one another in the respective mother tongue and in inter-cultural exchange. Beginners' "tutorials" organised by students for students in small groups and moderated by older students, provides the opportunity to discuss the whole range of topics important for first-year students and to answer open questions.

### Characteristics of Informal Learning and Factors of Success

What is the difference between formal and informal learning situations? Formal learning situations have a planned structure including, among others, time, place, teacher, (group of) participants, learning goals, content, media and methods. Informal situations lack some or most of these characteristics. They are all social situations, non hierarchic and student centred, self-controlled and trustful, and structured by versatile (learning) goals. There are some situational features which influence or even determine the chances for success of informal learning situations. Communication skills of participants seem to be the most important requirements for successful participation. Regarding informal learning situations in general, open access to a delimited space is a critical factor. Regarding web-based environments, usability plays a major role for acceptance and success. The chance to mix course related questions with private matters – a kind of "work-life-balance" – is another factor of success. To discuss private matters and personal problems as well as to pose "silly questions" requires an atmosphere of mutual trust and equality of all partners. Legal questions might compromise the potentials of web-based learning scenarios (formal or informal).

If informal learning is more efficient we will have to think about using it within formal curricula in a more effective way: as one of several resources. According to the constructivist theory of learning, it is impossible to control a person's learning process. Teachers are just able to stimulate and to trust in the autonomous activities of learners. A respectable number of teachers at TUW are already "teaching" this way by giving assignments with open structured problems to be solved in small groups. Especially courses offered as blended learning scenarios are often following this concept. Nevertheless, there could be improvement in terms of quantity and quality. But for the latter we still need more detailed empirical research upon the factual conditions and structures of successful informal learning in the context of formal study programmes.

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# CHANGES IN FACULTY PERCEPTION OF INTERNET INTEGRATION WITHIN THE TEACHING PROCESS

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## Introduction

One recent innovation in higher education has been the rapid integration of the Internet into academic instruction. The web's potential impact on educational processes include: new pedagogical approaches based on unique features of the technology; improved information-organization, representation, and handling capabilities; enhanced communication among students and teachers, and support for collaborative learning (Mioduser & Nachmias, 2002). Currently, an extremely large number of lecturers at universities worldwide are exploring this potential in their academic courses (Allen & Seaman, 2004; Bonk & Graham, 2006; Harasim, 2000). The incentives that led faculties to integrate the Internet in their teaching process were mainly intrinsic: an opportunity for professional growth, a challenge to provide innovative instruction and apply new teaching techniques and technologies, self-satisfaction and peer recognition (Parker, 2003; Rockwell, Scheuer, Fritz & Marx, 1999; Wolcott & Betts, 1999). The extrinsic motivators were stipends, decreased workload and increased academic release time (Clay, 1999; Parker, 2003). Many faculty members report a positive experience and changing perception of their teaching role (Bower, 2001; Wolcott & Betts, 1999), and positive perception of online teaching consequently to acquiring teaching experience in the medium (Kurtz, Beaudoin & Sagee, 2004). However, the research literature lacks of a longitude perspective of faculty practice and pedagogical perception changes. Therefore, the main focus of this paper is the process of faculty experience, and the changes in their perception on different pedagogical aspects of Internet integration.

## Method

During the 2001 academic year, we interviewed 17 faculty members from Tel-Aviv University. These chosen faculty members integrated the Internet in their teaching process in an interesting and varied way, using different computer management system components. Four years later, during the 2005 academic year, we interviewed them again. The pre and post interviews were analyzed and the faculty statements were categorized into an indicator developed for this purpose. The indicator includes three levels divided into nine pedagogical aspects: (1) faculty self perception: faculty motivation level, the Internet integration model and faculty difficulties in website development (technological and pedagogical); (2) faculty perception of the Website: Website usage for content delivery, faculty participation in discussion groups and Websites as a means of communication; (3) faculty perception of students: students' motivation level, faculty perception of the extent of students' web-based learning and faculty perception of the students' technological difficulties.

## Discussion

In general, the research results show positive faculty perception in different pedagogical aspects of Internet integration (in the year 2001 and in the year 2005). These findings are correlated with the current state usage of the faculty – their positive attitude led them to an interesting pedagogical usage that exploits the webs' potential in varied ways. However, during the years there was a decreased trend in the faculty motivation level. Although the motivation was high to begin with, after 4 years there was a sense of exhaustion and extraction. These results can be explained by the process in which gradually the website becomes part of the teaching environment, and does not challenge the faculty either pedagogically or technologically. The results concerning other faculty perception changes during the years, show positive trends in some aspects. The most prominent are the changes in faculty perception of students' motivation (increased) and technological difficulties (decreased). These results can be explained by high usage skills acquired during the years, as well as better technological infrastructure. When technological obstacles are removed – the students learn to exploit the most from the web-based learning environment and focus on the learning process, which leads to a higher motivation level.

One of the surprising results refers to the extent of the Internet integration. The results show minor changes in the faculty perception of the Internet integration model. Most faculty members (70%) did not change the integration model, in contrast to the research literacy which expected a higher level of integration during the years. These results can be explained in two ways: the first relates to the faculty satisfaction in the way they integrate the Internet, providing them with a pedagogical solution within the teaching process. The second relates to the faculty need for face-to-face meetings as part of their personality and teaching philosophy.

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## E-HOMEWORK SYSTEM ENABLER OF LEARNING

*Doug McKessock, Clare Chua, Ryerson University, Canada*

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This paper outlines the results of the implementation of the Web-Based Homework, which is known as 'e-Homework'. The uniqueness of our system is that it assigns each student a different set of data but the questions are the same. This limits the free riding problem but however it does encourage discussions among students. The main objectives for developing the e-Homework system were that in a large class (a minimum of 660 students) it took many hours to grade the assignments manually and providing feedback to students was too time-consuming. In one year, we were assigning problems without grading them and students had no motivation to even attempt to answer the questions assigned to them. The students' performances were not impressive. Realizing this, we developed a system where the assignments were posted online, graded online, solutions provided online, and immediate feedback made available to students. There is no doubt that our e-homework system provides the instructor a means to monitor the individual student's performance and provides effective feedback to instructors. From the students' perspective, is the e-Homework system useful to them?

Do we really need an e-homework system? Is it a fad? To answer these questions, we set out to measure the students' performance (in terms of the final grades) and the student's perception on the usefulness of the online homework. Findings showed that the students find the online homework useful with regard to being prepared for writing tests, understanding concepts, receiving timely feedback, generating peer discussion of statistics, developing good study habits and promoting higher confidence in dealing with the statistical concepts.

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## TEACHING AND LEARNING IN DISTRIBUTED AND MOBILE LEARNING ENVIRONMENTS – ONGOING PROJECTS AT NTNU

*Leif M. Hokstad, Jens Røyrvik, Norwegian University of Science and Technology, Norway*

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Due to the rapid technological development teaching and learning are no longer restricted to the confines of a traditional classroom. There are especially two concurrent traits of development that contribute to this situation. One of them is the development of powerful cell phones and PDAs with WLAN access capacity. An increasing number of computers sold now are laptops. The other one is the increasing availability of wireless broadband access. These two traits of development seem to have large implications for how learning is conducted and organized. The paper will through exemplify and some of the opportunities of the mobile and distributed projects currently in progress at NTNU.

### The MoBiO project

The MoBio ("Mobile Biology Learning") project is an initiative between LIKT, the MultiMedia Centre at NTNU and the Department of Biology in the Fall term 2006. The aim of the project was to improve student cooperation and teacher-learner interaction. The aim is to provide learners with pre-lecture resources and assignments through several devices and points of access. The teachers produced a series of 5 minute video introductions for each lecture that provided a highlight of the topic for the week's lecture, and a set of questions or key phrases to be prepared for the lecture. These lectures were made available in two versions, one for the learning management system, and one for the mobile version of the same LMS. In cooperation with the producers of It's learning, a cell phone version was developed. The learners were equipped with a Nokia N 80 cell phone, which incorporates both 3G, EDGE and WLAN facilities.

This project has several important points of entry for research:

- Issues related to technical infrastructure
- Issues related to implementation of mobile devices into learning contexts
- Issues of possible effects

### Experience, presence and distributed learning

In 2005 all municipalities in Norway were instructed to offer classes in mother tongue to all schoolchildren. Most municipalities lack qualified teachers in some or many of these languages. Trondheim county borough initiated a project to find a new way to offer education in all languages together with NTNU and a research group. We developed a classroom that allows teachers and students to learn how to collaborate over a distance.

The focus of the project is related to activity and experiences in these new classrooms, especially relations between teachers and students and their experiences related to *presence*. In these classrooms, students will participate in web based, distributed, real time learning. A key question is: *How do teachers and students experience each other's presence in this situation?*

In this project, teachers and students will find themselves geographically both collocated and distributed. In a typical learning situation, the teacher and a couple of students participate inside the classroom physically located at Ila Skole, while two or three students participate from their homes in another part of Trøndelag. Other times, the teacher will participate distributed, and teach students both in the classroom and distributed throughout the country. The key focus of the project is to understand *presence*, both as a phenomenon in itself and as a way of understanding and achieving distributed learning. The goal in this project is to understand presence as not defined spatially. We will illustrate the technology by an amateur movie, pictures, and narratives from classroom usage. These issues will be addressed:

- What are the ontological implications of experiencing presence of distributed learning?
- How do the teachers and students experience distributed learning?
- Which methods of learning are used?
- Which ICT-solutions support an experience of presence in distributed learning?

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# INTEGRATING SOCIAL SOFTWARE IN AN ONLINE E-LEARNING COURSE FOR TEACHERS

*Maarten Cannaerts, De Nayer Instituut, Tom Wambeke, KATHO Hogeschool Zuid-West Vlaanderen, Belgium  
Steven Verjans, Open Universiteit, The Netherlands*

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## The EliseLeren course concept

The online course EliseLeren is aimed at Flemish teachers in higher and vocational education, and focuses on didactical aspects of e-learning practices in higher and adult education. The e-course consists of an intensive eight-week period of reading, collaboration, communication and experimentation, and the main focus of the course lies in the sharing and reviewing of interesting practices, but also offers some theoretical reflections. The learners use a variety of communication, information and evaluation tools for reaching the course objectives, for example discussion boards to share experiences, wikis for collaborative writing or personal reflection or videoconferencing tools to talk with each other or the coaches. The course is highly structured and strictly paced: the learners follow a prescribed path through the content and have to participate in weekly assignments. The learners (more than 250 since 2003) are divided into small groups: a typical learning group consists of 15 participants who are coached by two e-coaches.

## Social software tools used in the online course

The ELISE course makes intensive use of various software platforms and tools, which reflects a conscious choice by the course developers and e-coaches. Firstly, it was felt that no single software platform (VLE) can provide all the necessary tools for an innovative distance education course. A second reason was to confront the learners with other software instruments that they may find usable for their own classroom practice. This reflects the 'learning by doing' philosophy of the ELISE e-course. These various instruments can be considered as 'small pieces loosely joined'. They are joined mostly by automatic syndication methods to the central VLE, which is Blackboard or Dokeos – dependent upon the learner's choice – and to the Network Portal for the ELISE community (for which we use Drupal). The various tools we used can be divided into three groups: information, communication and evaluation tools.

- Information tools include Drupal, a content management system, that allowed us to collaboratively write and edit the course content, and offer it in a hierarchical book structure. The FlashVlog tool made it remarkably easy to record and disseminate short movies from an e-coach. The Slideshare social software tool enabled the sharing, reviewing, commenting or syndicating of presentation files. Finally, social bookmarking tools (Furl and de.icio.us) were used to link to external information sources.
- Communication tools were felt to be crucial for this distance learning situation, and therefore a variety of tools was implemented: asynchronous discussion forums provided the main means of communication and of posting assignments. For collaborative writing, both wikis and Google-docs were used. Instant messaging tools (Skype and MSN Messenger) were used to create a feeling of presence and offer direct communication with colleagues or coaches. Finally, we used the FlashMeeting web conferencing tool for regular synchronous meetings of the learners or coaches, or for interviews with experts or students.
- Evaluation tools were used with three main aims: self-evaluation was carried out through an online document in Google-docs, that was shared between learner and coaches; peer evaluation was performed through the rating and commenting mechanisms in the discussion forum that was used; course evaluation was performed through a web conference in the middle of the course, and an extensive survey at the end of the course.

## Learner evaluation

Most participants indicated that the range of tools used in EliseLeren provided them with hands-on experience of a wide range of tools, which allowed them to judge the relevance for their own learning situation. They also valued the ease-of-use of most instruments and the added didactical value within the EliseLeren setting. The communication tools ensured that the learners experienced the social cohesion of the learning group, even at a distance. However, as to their intention of actually using these tools in their own teaching practice, participants were more reserved. Moreover, it was felt by some that the 'abundance' of tools lead to a loss of structure and coherence.

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## THE ROLE OF THE FACILITATOR IN THE DEVELOPMENT OF TEACHERS' ICT COMPETENCE

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On-line teacher training means a special challenge to the mentoring teacher, or the facilitator. Enhancing computer literacy, technological skills and pedagogical methodology at the same time is rather difficult, especially if the target audience is the teachers themselves, who are more and more interested in the use of ICT. In this paper we show the complex nature of on-line teacher facilitation, referring to the roles the facilitator has to fulfil during the training. The advantage of distance training of in-service teacher for using ICT in their everyday work is that the participants learn about the pedagogical values of using computers by actually using them as tools in their own training. During the course teachers have to consider the advantages and drawbacks of searching the internet, processing data, or using communication technology, in their own pedagogical setting. This experience allows them to incorporate the use of ICT in their everyday teaching practice relatively easy.

This research is based on the data from the EPICT pilot course in Hungary, 2006 and uses data from similar teacher training courses of the KP-Lab and Calibrate projects through methods of triangulation data analysis. Mentor types versus learner performance are contrasted and optimal mentoring/facilitating strategies proposed.

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# LIFELONG LEARNING TEACHERS' NEEDS IN VIRTUAL LEARNING ENVIRONMENTS

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## Introduction

The increasing use of repositories of integrated learning objects in e-learning environments, whether as a complement to the traditional education (blended learning), or as a common tool in distance learning by means of new technologies (virtual learning), is a clear indicator of the importance given to the organization of the educational resources, with a clear common objective, as it is the reusability of these resources in different educational experiences. Due to the continuous changes in the scope of the learning environments, the teaching staff need training to gradually adapt to the new technologies and new standards that appear, such as LOM, SCORM, or IMS-LD, in a lifelong learning approach; in this context, it is necessary to adapt the necessities of the standard to the characteristics of the educational situation where the repository is used; in addition, the resources must be tagged appropriately, otherwise it is very likely that the chosen standard is insufficient to describe certain aspects, like the specific aspects of teaching using virtual environments, or on the contrary it may include a great amount of description that is irrelevant for the required purposes. In this work we present an educational experience for consultants, in which the objectives were to train the consultants in the use of standards for the description of learning objects, and to get them to know and also obtain feedback from them on the application profile that was being designed by the UOC contents management team for the access to Learning Object repositories within the institution related to a personalization project<sup>1</sup>.

## Training teachers in learning objects standards

With the objective to present the existence of different e-learning standards for the description of pedagogical resources, two courses, one in May and another one in November were imparted, of an approximated duration of 30 hours each one. In these courses a total of 118 consultants divided in two classrooms participated altogether, one classroom had Catalan as the language of instruction while the other one was conducted in Spanish. This makes around 30 students per virtual classroom. The course focused on the LOM standard, its categories and elements, its use and application profiles, and the use of tools specialized in the generation of XML files to mark the resources, facilitating the reflection on the practical use in educational situations. Computer literacy as a user of desktop packages and Internet was a requirement to register for the course. The contents of the course were determined upon the objectives previously described, and to support these, two activities were proposed, as well as three debates that were complemented with the materials distributed during the course; the two activities and three debates focused on the following: classification system of pedagogical materials used by each individually, deficiencies of the classification and location of resources in a system based on a structure of directories and descriptive file names, or following notes, and necessity of the use of a metadata file for the description and location of educational objects; identification of the attributes necessary to describe the educational materials and to identify the necessity to use an application profile in our working environment; to identify and understand the necessity to define the smallest learning object to facilitate its reusability, as well as the advantages and disadvantages involved; and a debate on UOC LOM Application Profile, the moment it was made available to them. Upon completing the two series of courses, the participants were offered the opportunity to give their opinion by answering a quality questionnaire, designed to assess, among other concepts, the activities proposed, the materials used, the methodology and development of the course, and the relationship between the consultant and the participants. The feedback provided by participants in the two courses was quite positive, though the second series was slightly better valued with over 80% of satisfactory opinions. Participants valued the practical application of the course contents to their teaching practice for UOC slightly lower than the previous concepts, showing around 60% of satisfaction on this particular respect. The creation of an application profile is not free of difficulties: to maintain the compatibility and interoperability with other profiles and simultaneously allow and satisfy all the necessities for cataloguing of the group of users to whom it goes directed are two objectives normally opposed.

On the other hand, a teaching experience oriented to professors, management personnel and consultants was made with the objective to make known the application profile and to assess its limitations, in which the participants showed their desire and interest to include more descriptive metadata of the learning object and its pedagogical aspects.

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<sup>1</sup> Project PERSONAL(ONTO) is partially granted by Spanish government TIN2006-15107-C02-01/02.

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# SUGGESTIONS TO ENHANCE THE EFFECTIVENESS OF E-LEARNING FOR TEACHERS IN KOREA

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A critical aspect about e-learning is that there should be an appropriate balance between the demand of learners and the supply of service providers. However, a majority of e-learning services are provider-oriented. In fact, e-learning should be learner-oriented in order to let learners make the best use of it.

To improve the current situation, it is imperative that e-learning reflect the opinions of learners. By conducting a survey on e-learning programs for teachers provided by online training institutes in Korea, this study analyzes the positions of both learners and service providers and presents suggestions to close the gap in their respective opinions.

## Research Method

A survey was conducted of 648 teachers who had received online training from July 1, 2005 to June 30, 2006, and 66 service providers from 32 institutes. The survey method was web-survey, which was comprised of two sections: satisfaction of e-learning and needed improvements. Differences between groups regarding satisfaction for e-learning were analyzed through t-test. Regression analysis was utilized to examine each question to calculate its impact (in other words, its importance) on sub-section satisfaction. A portfolio matrix analysis was also used to develop suggestions that would enhance the survey results.

## Analysis

Analysis was conducted in the 2 aspects:

- Comparison of Sub-section Satisfaction of Learners and Service Providers  
The categories are utilization environment, contents, training management, support services, and effectiveness.
- Future Tasks to Enhance the Effectiveness of Online Training  
Survey respondents were asked to rank nine future tasks designed to enhance the effectiveness of online training. The number one task chosen by respondents was improvements in the effectiveness of learning (24.0%), followed by lower fees (16.4%), and more advanced courses after training (14.9%).

## Conclusion

First, the satisfaction survey results show that learners and service providers do not share the same opinions about training management and support services. Thus, service providers should always be ready to improve their services as demanded by consumers.

Second, as for support services, the survey reveals a number of urgently needed improvements: accurate information about lecturers, support for creative learning activities, inclusion of learners' perspectives into curricula, reasonable fees in relation to the quality of classes, and analyses on the performance of learners. Therefore, online institutes should provide learners with detailed information on lecturers and various methods that will allow learners to actively participate in the training.

Third, the future tasks that learners recommended included improving the quality and depth of learning materials, more advanced courses after training, more options for the length of training, and more general information on the training. Based on these results, online training institutes should reinforce their efforts to improve their services.

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# FLEXIBLE LEARNING PLAZA – A PARTICIPANT-RUN NET BASED LEARNING COMMUNITY SUPPORTING CONTINUOUS TEACHER DEVELOPMENT FOR FOLK HIGH SCHOOL TEACHERS AND STUDY CIRCLE LEADERS IN NET BASED COLLABORATIVE PEDAGOGICS AND METHODOLOGY

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## Why “Flexible Learning Plaza”?

The “Flexible Learning Plaza” was opened in early September 2006. Up to that time the Swedish Agency for Flexible Learning had, on a national basis and in close collaboration with folk high schools and study associations, offered teacher training courses in net based study circle pedagogy and methodology. The courses offered were a short basic course, and a more advanced much longer follow-up course. However, although the basic course receives very positive evaluations and has high status a majority of the teachers/leaders who pass this basic course do not actually start flexible courses/study circles. We considered what prevented the teachers/leaders that had passed only the basic course from starting flexible courses/circles. Two main problems were found.

The first reason was that the individual teachers did not get the support they needed when they came back to their organisation with enthusiastic plans for pedagogical modernization. The second identified reason for the absence of newly started courses/circles was that the basic course gives the participants a strong pedagogical platform, but they also needed much more technical advice and methodological support. However, time constraints prevent this from being provided within the basic course.

## The Community

The partial solution to these problems was the “Flexible Learning Plaza”, a net based, learning community to support continuous teacher development. This community, open both to those who have passed the basic course and to expert practitioners, meets the varying needs of teachers for support and provides it at the very moment these leaders face problems in their first courses or circles, just-in-time solutions. We have attempted to create an environment where members meet as equals, where both beginners and experts are attracted to participate and where newcomers can grow into experts over time. The community fulfils the need for continued pedagogical and moral support.

## Shorter follow-up courses

The second need was for technological and methodological help. To meet this need the community offers its members short and intensive courses, organised as study-circles, all of them with a focus on strengthening collaborative learning processes in flexible courses/study circles. The technical solutions offered are relatively simple and attractive to learn and the pedagogical profit from using these solutions is clear. This is necessary because technical support is limited in the members’ organisations and often they have to be their own course structure builders and web designers.

## The “Flexible Learning Plaza” as a hub for all teacher development

The community is also growing into a hub for all our teacher development. Teachers/leaders on the basic course are introduced to the community as part of that course. The longer course involves direct participation in the community plus a three-day-long online seminar where all community members discuss the papers produced as part of that course.

## The story so far...

After only six months we are not ready for a serious evaluation but we shall discuss some of the trends we have seen and some of the problems we have met during this first period of the community’s existence.

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# LOOKING FOR A PERFECT BLEND: A SUPPORT SYSTEM FOR DESIGNING BLENDED LEARNING IN HIGHER EDUCATION

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## Blended learning: the concept and applications

The concept of blended learning is multi-faceted and often confusing. Various sources refer to blended learning as the next big thing that will replace “e-learning”. Within the higher education context blended learning is not a new phenomenon. What is new is rapid increase and variability of possible components in a blend, especially in relation with Web 2.0 and E-learning 2.0. The institutions must decide, through selected criteria, how these components should be blended to produce a fruitful mix. A blended course must constantly determine the balance between face-to-face and technological components in using blended learning as a didactical method. The use of technology, however, does not automatically make any teaching process pedagogically better, the teachers have to take care that the process is pedagogically sound.

Blended learning allows to benefit from the advantages of both traditional and modern ways of learning in higher education, and making innovation in otherwise traditional university teaching easier and acceptable. Integrating research and practical examples offers good bases for initiating change in universities that, by definition, are based on research.

The B-Learn project, funded by the European Commission under its SOCRATES – MINERVA programme, is designed to offer a number of tested ways that integrate traditional learning methods with methods offered by new technology, especially social software and other applications associated with Web 2.0 concept. The primary target groups of B-learn project are the users of blended learning (teachers, students, instructional designers, educational technologists) mostly from higher education institutions, but from other types of institutions as well.

## Developing an Electronic Performance Support System for “blenders”

One of the main outputs offered by the B-Learn project is the Electronic Performance Support System (EPSS) that assists instructional designers to develop suitable blended learning model for their courses. Gery (1991) has defined EPSS as „an integrated electronic environment that is available to and easily accessible by each employee and is structured to provide immediate, individualized on-line access to the full range of information, software, guidance, advice and assistance, data, images, tools, and assessment and monitoring systems to permit job performance with minimal support and intervention by others“. We used participatory design approach and paper prototyping in order to conceptualize the structure and functionalities of B-learn EPSS. The multilingual prototype of Web based EPSS was developed using service-oriented architecture. It contains a blended learning handbook, research reviews, tutorials, templates, best practice examples, discussion forums and glossary. The content of EPSS is released under Creative Commons license which means that everyone is allowed to modify, localize, distribute and use it if they refer to the authors of this product.

The aim of this presentation is to introduce the advantages, recent developments and challenges of blended learning and to involve the participants in hands-on activities with a new Web-based EPSS tool that provides support to university staff in the process of designing the blended learning courses. We are also going to introduce the theoretical foundation underlying the technical development of B-Learn EPSS: the results of the meta-analysis of the research on blended learning and summary of the blended learning case studies from 6 different countries.

A more detailed description of the project B-Learn activities, including the designing and developing of the EPSS can be found in the Web site of B-learn project (<http://www.ut.ee/blearn>) and in a wiki-based collaboration environment Trac (<http://trac.htk.tlu.ee/blearn>).

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# THE BLENDED EXPERIENCE: TRANSNATIONAL CONTINUING PROFESSIONAL DEVELOPMENT IN DISABILITY AND DIVERSITY

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*John Davis, University of Edinburgh, United Kingdom*

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## Background

The question of why blended learning be used as an effective learning solution rather than just a cost efficient method of integrating technology and traditional teaching methods is fundamental. Blended learning is about developing creative and innovative learning solutions that can incorporate information technology as an important feature of the evolving curricula rather than simply an adjunct to face-to-face delivery. The blended approach to develop learning capacity also examines notions of asynchronous learning and knowledge architecture as primary characteristics of creative and innovative curriculum design that enables both independent and autonomous learning.

We examine blended learning approaches and thematic concerns as they apply to continuing professional development in the discipline of disability studies and rehabilitation. The authors have also been centrally involved in a number of blended learning projects on an international basis which address the continuing professional development of practitioners and theorists in the field. Blended learning offers an effective and quality driven way to enhance best practice and innovation in this context. The terms *blended curriculum* and *blended learning* have become relatively common – however the terms are still ill-defined and ambiguous and therefore lead to speculation when considering their application. The increased use of learner communities and VLEs (virtual learning environments) means a reshaping of perspectives in relation to pedagogical values, ideology and patterns of student-centred learning. The blending of hybrid pedagogical imperatives and methodologies, within the physical and virtual learning environments, has increased access and flexibility for both the learner and the academic.

## Challenges of blending the learning environment

This paper examines current pedagogical theory within the reality of educational practice and learning development. It looks at the strategic priority demanded by those responsible for managing innovation in teaching and learning enhancement within contexts of diversity and, specifically, disability. The persistence of extraordinarily high levels of unemployment and underemployment among those with disabilities raises questions about the nature of vocational training provision, assessment criteria, realistic outcomes, effective planning and required additional supports. This puts a spotlight on the techniques and methods used in the education and training of professionals. Rehabilitation professionals in Europe need to play an increasing role in developing the resources, techniques and vision to contribute to the achievement of real equality not only for people with disabilities but all those oppressed by discrimination and injustice. But to do this their own training needs to reflect – in content and delivery – the needs of those excluded as well as the opportunities offered by blended learning.

The change of understanding in moving from time-limited curricula to self-study, open-learning and on-line learning (often in work contexts) alters traditional understanding of educational approaches and methodologies. Managing this effectively requires a coherent response and the development of clear management protocols, to sustain learning capability. There are two themes: *learning to adapt* and *learning to learn*. This has exciting potential, where creativity and innovation are key processes within the knowledge architecture of the organization and its academic partnerships with its learners.

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# DEATH OF THE SANDWICH: BLENDED PEDAGOGIES AND SITUATED LEARNING IN JOURNALISM EDUCATION

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## Situated Journalism Education and Communities of Practice

This project, funded by the Learning & Teaching Centre, University College Falmouth, builds on a pilot study of students undertaking a four week placement in UK media companies, and examines the feasibility of a distance learning and situated third level (30 weeks) for a UK journalism degree course; BA(Hons) Journalism. The level will be managed and run by the journalism department at Falmouth in partnership with newspaper and magazine companies in the UK. The study partners have been BBC magazines, Future Publications and Newsquest (newspapers).

Contemporary debates in UK journalism education address the fact that whilst an increasing number of local media employers in the UK embrace a return to workplace apprenticeships, there remains a consistent demand for employees equipped with those critical and transferable skills reflected in higher education outcomes. Meanwhile, rapid shifts in the technological platforms supporting contemporary journalism provide significant resourcing challenges for universities. It is our view that parallel advances in learning technologies offer an effective solution to these challenges through access to situated learning experiences. In this context we propose the design and delivery of a level three (final level) undergraduate 'internship' in which the bulk of level three studies would be workplace based, providing students with continuous industry experience in a distance learning supported environment. We draw on the work of Wenger and others in suggesting that collective learning, and we refer here both to the activities that take place on the forums and in the workplace, can produce practices in tune with both their situations and the attendant social relations.

Alternative advantages of such relatively lengthy periods of e-learning supported internship include overcoming inevitable industry skepticism towards the kind of 'simulated', or short-term workplace experience currently broadly offered by way of vocational experience, increasing student motivation and potential to effectively secure employment, and widening participation by obviating the necessity for sustained campus-based learning.

## Project Overview: Digital Pedagogies, Online Dissertation Support and e-Portfolios

The proposed final level of the journalism degree will be supported by two weeks of classroom based preparation prior to the placement, followed by classroom based tutorials and summative assessment upon completion of the placement. The level will comprise three parts or units; a 26 week placement assessed primarily through weekly reports on a multimedia blog (60%); a 4-6,000 word case study or dissertation (20%); and an e-portfolio (20%) including peer-critique and assessment.

The dissertation element, provides 20 of the overall level three 120 CATS (60 ECTS), and would comprise a 4-6,000 word critical essay allowing students to demonstrate their critical and contextual awareness of journalistic practice, with direct relevance to their experience in the workplace. It would be supported by a structured framework of online preparatory seminars alongside a database of relevant literature, a range of pre-set, assessed 'tasks' encouraging active application of the skills in question, and mediated asynchronous forum debate. Individual dissertation supervisors will provide regular, scheduled electronic and telephone contact with students throughout the project. The group forum will remain an active resource throughout the dissertation process, so that learners can contribute teaching presence through their individual processes of enquiry in line with Garrison and Anderson (2003).

The accompanying 20 credit unit of the year's study revolves around producing an online portfolio of practical work during the work placement. Support will shift from group to individual in much the same way as the dissertation project, the required outcome here being an e-portfolio of work relevant to the placement speciality. This harnesses the multi-media learning, and professional development possibilities of the e-portfolio.

The e-portfolios will become part of a continuous flow of learning resources for subsequent learners as well as their own peer group in an ongoing and dynamic learning community in which the aims of blending and integrating e-learning with 'real-life' experiential learning have the potential to be fully achieved.

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## INTEGRATING ONLINE LEARNING INTO TRADITIONAL DISTANCE LEARNING

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This paper describes some of the key issues encountered through the integration of online and scheduled face-to-face learning components into a traditional distance learning programme. The programme described in this article is aimed at learners in different delivery modes located in different countries world-wide and predominantly working full-time and studying at evenings and weekends. This paper focuses on the challenges encountered in the design and integration of online learning resources with traditional distance learning support and face-to-face tuition. We will also share some preliminary observations of the experience gained and this work is part of a wider evaluation project considering the key factors affecting student retention and progression.

The programme described in this paper is a recently launched, (May 2005), professional qualification by the *ifs* School of Finance (*ifs*): the Professional Diploma in Financial Services Management (Professional DFSM®). The Professional DFSM® has evolved from the successful Diploma in Financial Services Management (DFSMS). The *ifs* is a leading provider of education to the financial services industry. *ifs* deliver a range of qualifications from school level to higher degrees, including tailor made programmes for corporate customers and CPD for members working in the financial services industry. Corporate customers include HSBC; Barclays; Lloyds TSB and Standard Chartered.

The paper reports on some important lessons to be learned from the integration of online learning into traditional distance learning programmes. Factors of importance include student and tutor induction; VLE training; and ensuring that online activities and functionality are formally integrated into the programme of study. The paper reports on a wider project to analyse student retention and progression on the Professional DFSM® based on research conducted with *ifs* students and will be the subject of a wider future paper.

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## PRINT VERSUS DIGITAL: CRITICAL READING OF INFORMATION

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Present-day information consumers are exposed to rapidly growing volumes of digital or printed information, which can be authentic-reliable, biased, or even false, using elaborate textual or multimedia manipulations to hide its biased or falsified nature. Therefore, the user's ability to read information critically has become a key-issue and a "survival skill" in constructing well-founded knowledge. The ability of consumers to read information critically requires a special kind of cognitive skill, termed "information literacy".

In recent years we face a fast growth in digital platforms for delivering information in general, and news in particular, as indicated by the blooming of digital newspapers on the expense of the printed ones, as well as in reports that today more and more people retrieve news from the Internet. It has been suggested that by the year 2020, about 70% of the texts will be available in a digital format. These findings led to extensive research efforts that compare readability and critical thinking in print versus digital formats, in order to establish standards for proper information design formats. However, despite these efforts, the factors that control effective and meaningful reading in digital environments are not yet clear, and further research is needed, especially in understanding the differences in readability between digital and print formats.

This paper presents an experiment which compares the ability of users from different age and gender to apply critical thinking skills in reading news in digital and printed formats, in order to shed light on the critical thinking skills of readers.

The proliferation of online information resources in recent years challenges consumers with the need to employ critical thinking skills in reading news. Moreover, the co-existence of both printed and digital resources poses questions as to the ability of users to read news critically in multiple representation formats: the traditional printed and the digital, hypermedia-based newspaper formats. This research compares the critical ability of reading news in a print and a digital format, by two age groups: high-school and college students. The most prominent finding is the better performance of the young participants (high school students) in reading digital news formats, and the better performance of the older participants (college students) in reading news in a print format. The paper suggests approaches for interpreting the results and directions for future studies. The findings may provide designers, researchers and educators with useful insights for designing effective messages in the information age.

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## CAN BANK MANAGERS PLAY? – ON-THE-JOB TRAINING FOR BANK STAFF

*Mathy Vanbuel, Marie Bijmens, Peter Andries, Sally Reynolds, ATiT, Belgium*

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Within the framework of the Learn@Work Project<sup>1</sup> and together with the training department of the largest Belgian bank, ATiT designed a training package to support job coaches within the bank who are responsible for the training of new employees on the work floor. Every new employee in retail banking gets a 5 month training, which is fully integrated in his/her job as a bank official in a local branch. To support this training period, a job coach is normally appointed among their direct (senior) colleagues, most often the bank director of the branch or another senior experienced person. These “job coaches” are however not trained to be on-the-job training coaches, and while they may be very experienced employees, they may lack specific and concrete skills for supporting, motivating and sustaining the new employees during training which was seen as a problem by the training department who felt that they could do a better job in their role as a coach if they were better trained.

In order to initiate these coaches in the field of training and coaching, ATiT staff created together with the bank training staff a pilot training module. Up to now, the selected coaches have had no incentive to carry out their task as a trainer: therefore a key objective of the programme was to build a level of attractiveness and excitement into the process by using a serious gaming approach to the support materials. The intention was to spark interest for learning and make what was potentially a boring topic fun and challenging. Another objective was to integrate the game completely in the day-to-day working environment.

Trainees, who leave the central training office after their first level induction training, receive a set of paper based training materials, a workbook for themselves and a support guide for their coach. They present these materials to the coach assigned to them in the retail bank where they continue their on-the-job training. The package contains also an envelope for the coach, with an instruction to register for the online Coaching Game. In this game the coach “competes” with his/her colleague coaches (with whom he normally does not have a direct contact, they are located all over the country and may not even know each other). The competition is about how well he supports the trainee, but this is not immediately visible to the coach. When the coach has registered in the online Coaching Game, he also automatically registers his trainee, and from then on the service keeps track of progress throughout the training path. The consecutive actions of the coach (exploring and assigning training tasks) trigger reactions from the trainee that in turn advances the game. The coach has the opportunity to “invest” in the success of the trainee in carrying out the task he has assigned to him. What the coach does not know is that the score he receives depends on the assessment of the coach’s support actions by the trainee. In this way, he is implicitly encouraged to invest in support for the coachee (process), which results in better achievements on the work floor (product).

As this is a pilot application, a comprehensive evaluation is being carried out. The preliminary results are very encouraging: although it took a while before the momentum started to set in, once the game area started to fill up with competitors, a certain buzz became apparent. The competition became self-supporting without intervention from outside. This is important as the whole game based learning experience is meant to be self supported with very low maintenance from the central training department. It is hoped and expected that once the participants get to know each other and start to compete within different sessions, then a community will start to grow and the participants will not only learn from their own experience (learning by doing) but also from exchanges within the community.

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<sup>1</sup> This project has been funded with support from the European Commission, DG Education and Culture, in the Socrates/Minerva Programme.

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# FROM INSTRUCTION IN LARGE SIZED CLASSES TO TEAM LEARNING DISTRIBUTED TO WORKPLACES

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## Framework for Developing Instruction in Large Sized Classes

The drastic increase in the number of students at higher education institutions during the last quarter of the twentieth century has forced us to change the conventional teaching styles. Large sized classes are not exceptional, even at the higher professional education levels. A framework and procedure has been developed to design the instruction for large sized classes of undergraduate students (276 at maximum). The figure shows this framework and procedure. From this, we have produced metaphors, images, models and propositions, and have validated them through a systematic analysis and interpretation over twenty-lesson long courses during the past eight years. Metaphors for team learning are exemplified as three stages: falling parachute, sliding para-pente and flying paraglider. The model applied in this development is MACETO: Meaning, Action, Content, Environment, Tools and Outcome. More than 60 propositions are described as empirical laws for the practical lessons. These metaphors, images and propositions, extracted from the practice of undergraduate students, have been applied to implement distance education during an initial trial of team learning with in-service teachers at two high schools. The introduction of team working in order to transform teachers' attitudes from a teacher-led instruction to a learner-centred is very difficult into a basically conservative school culture.

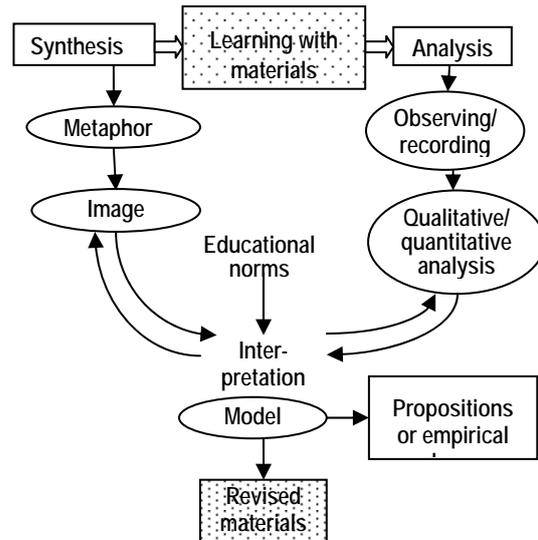


Figure of Empirical procedure for development

## Application of a Framework for Developing Distance Learning Distributed to Workplaces

Teachers of two teams, named Team M (Murasakino) and Team O (Ooita), are working at different high schools; one is close to our university and the other at a remote distance. Team M is progressing quite well at a sliding para-pente stage, while Team O is at a falling parachute stage. The two teams are compared and analyzed on various factors of functioning. It is easy to follow the learning process and active commitment of the teams, but very difficult to identify any of the real reasons for failure. The first author visited Team O twice during the trial stage. Difficulties of developing distance learning at a remote workplace, which Team O serves, are due mainly to the invisible working situation of the team and the new and different strategy and framework for conducting research on teaching. Team M is working on the developmental strategy, while Team O is working on the hypothesis testing strategy. We are now trying another possibility for revitalizing team working at the university with graduate students and in-service teachers. Three new metaphors have been added to the initial ones: open-air market, ateliers and specialized chain stores. The metaphor of open-air market is used for stimulating students' mutual exchange of their knowledge and skills, ateliers for enhancing their competence further, and chain stores for delivering produced results to local schools.

## Conclusions

The different stages of the two teams, one ending with the falling parachute stage and the other with the sliding para-pente stage, are scrutinized to discover the influential factors and explain the reasons for the different consequences. Identified factors are the number of team members, subjects taught, awareness of instructional problems, framework of studying their teaching, and the experiences of the team leaders. We could not identify any definite factors which could explain the failure or success of the trials. Three new metaphors are being tried out now and so far seem to function well among students and in-service teachers in a workshop held on the university campus. The effectiveness of these metaphors should be tested in the next distance learning trial. A cyclic procedure of trials on campus and application at distance locations is essential for accurate and beneficial implementation.

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# ROLE OF WEB 2.0 IN VOCATIONAL PROFESSIONS

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## Background

The definition of competence profiles of professionals involved in vocational education and training (VET) has become highlighted. When defining the competences of VET professionals we examine both their professional and pedagogical knowledge. Modern surveys focus on the need and ability of continuous renewing of vocational knowledge and on the competence of applying innovative pedagogies. There is relatively few available research results on this topic, which necessitated own empirical research as well. The present summary contains the results of a Leonardo da Vinci project – namely ECEPT<sup>1</sup> – survey sizing up the circumstances of the usage of innovative pedagogies in VET and a background survey for an analysing study prepared for CEDEFOP<sup>2</sup> titled “Defining VET Professions”. These results are examined from the following aspects: what is the relation between the second generation of e-learning toolkit and the existing competences of VET professionals; and does this toolkit raise new competence needs of teachers and other vocational professionals.

## Application of innovative pedagogies in VET

In the course of a survey conducted among 170 professionals involved in Initial- and Continuing VET and teacher training by the help of questionnaires we examined inter alia the way they use several didactical elements in their everyday practice. In the answers respondents had to rank pedagogic methods according to the frequency and the relevance of their application. We had hidden the expression “Learning supported by ICT tools” in the list of methods which is in itself is not a pedagogic definition but a toolkit of educational technology. Nobody from the professionals had made any differentiation in between the methodology and a used educational technology. Application of ICT tools in itself is not equal with the application of innovative pedagogies. The early e-learning generations were built upon the methodology of programmed instruction and could be considered as interactive digital books. Several educational methods can be considered innovative, but these methods and goals were applicable in the traditional, i.e. non-electronic learning environment as well. The approach defining learning supported by ICT tools as an innovative methodology is basically false. Nevertheless, the survey reveals that this outlook is generally accepted on this professional field. The complex of provisions represented by WEB 2.0 technology can bring a significant breakthrough in the relationship of ICT tools and pedagogic methodology. Conditions of chatting, blogging, voice and video-communication and the technological condition system of collaborative WEB presence in general become available in schools and at home as well. This can open opportunities for teachers who apply innovative pedagogies in a right way, and can result in the extension and the efficiency of their previous efforts. Nevertheless, it is important to lay down that application of these technologies without the appropriate methodological preparedness can lead only to apparent results. Joint use of innovative pedagogies and WEB 2.0 technologies can result that successful teachers launch virtual classes or schools. It should be one of the major aspects of the transformation of school organization in the not-too-far future.

## Summary

When defining the requirements towards VET professionals it is practical to focus on the main profile of school as an organization providing public service. This profile can be summarized in the pedagogical programme of the institution which serves the effective and efficient education of students. In order to obtain this goal WEB 2.0 tools can effect powerful changes on the area of institutional pedagogical programme, governing methods and relationship management as well. In case of vocational teachers knowledge and routine of innovative pedagogies is elemental, and on its base ICT in general and WEB 2.0 particularly can be a component promoting effectiveness. The main obstacles of the usage of WEB 2.0 supported innovative pedagogies in VET are as follows: missing/available contents; overcharged curriculum requirements. From this aspect the missing innovative pedagogical knowledge of teachers is less relevant. The necessary technological backgrounds are available as well as the conditions needed for the organization and for the application of innovative pedagogies; the easily available, high quality contents have been missing so far.

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<sup>1</sup> E-learning based Cooperative Educational and Pedagogical methods for VET Teachers – [www.ecept.edu.hu](http://www.ecept.edu.hu)

<sup>2</sup> CEDEFOP = European Centre for the Development of Vocational Training

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## BLENDING LEARNING TO INCREASE FLEXIBILITY IN INITIAL POLICE TRAINING AND DEVELOPMENT

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This paper outlines a project in which e-learning materials are in development to increase the flexibility of a course that provides initial police training. The new materials are intended to be provided in a blend with paper-based and interpersonal elements to enable participants to learn effectively at any time and in any place. The project is outlined, together with process for development of materials, financial considerations and schedule. Progress is discussed and a number of associated issues are identified.

The Student Officer Course leads to the award of a Foundation Certificate in Policing in Partnership with Communities after 43 weeks. The course has been running successfully for almost one year with approximately 200 police students studying on three university campuses and in community and police placements in East and West Sussex in the south of England. The police students are employees of Sussex Police and spend about half of their initial training period of 43 weeks studying on university campuses, and the other half in police placements, carrying out patrol duties under the supervision of a tutor constable.

It is anticipated that blended learning (including e-learning) could be used to enable participants to work more independently through some parts of the course, studying where they like, at their own pace and setting their own timescales, but still receiving the support of a tutor when requested. It will be possible for students already on the course to speed up or slow down their learning, providing flexibility for those whose studies are interrupted by illness, etc. and also for those whose prior learning enables them to take a faster learning pathway. The development of e-learning materials is the largest and most essential part of the project and will enable production of a number of different 'blends' to provide the range of flexibility anticipated.

Production of the first module took much longer than anticipated. We learnt that it is unwise to share the early stages of this type of project with people who do not understand the iterative process and are expecting to see a high quality product rather than rough drafts. Our attempt to engage people in enriching it tended to invite criticism rather than collaboration. It has also proven much more difficult than had been anticipated to translate materials used face to face in the classroom into a form that provides good quality pedagogy in an e-learning form. In many cases alternative materials have been sourced or developed. Effective project management is essential. A project that links the interests of police, universities and community groups is sensitive and time taken to accommodate the concerns of all involved must be found if progress is not to be blocked.

This learning will inform the continuing production activities and will help us to shape the next phase of the project which must address development of staff and systems to ensure that the benefits offered by these additional materials can be realized.

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# OPEN EDUCATIONAL PRACTICES AND RESOURCES: THE KEY ROLE OF SOCIAL SOFTWARE

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## Context and background

In the last few years, Open Educational Resources (OER) such as educational materials made available under a liberal Creative Commons license or Open Source software tools that enhance learning processes gained much attention. OER are understood to be an important element of policies that want to leverage education and lifelong learning for the knowledge society and economy. This expectation is to some degree informed by the observation that the huge investments made so far in ICT-enabled teaching and learning have not brought about profound changes in educational practices. In particular, notions that the use of ICT would promote student-centred and collaborative approaches have not been fulfilled. Rather there is a considerable mismatch between teaching and learning as framed and maintained by typical educational institutions and the fabric of work in a knowledge-based economy "out there". In addition, there is an obvious gap between current educational practices and what a younger generation of students use almost naturally to communicate and form communities of interest outside "the classroom". The Open e-Learning Content Observatory Services (OLCOS) project has produced an OER roadmap report that emphasises the priority of open educational practices. One key element in promoting such practices is seen to be the Web 2.0 environment and the use of Social Software based tools and services.

## A new window of opportunity for innovation in e-learning

The OLCOS roadmap understands the current boom in the use of Social Software based tools and services to be a new window of opportunity for innovation in e-learning. These low-barrier and easy-to-use tools and services – Wikis, Weblogs, social networking, bookmarks and content sharing, RSS-based content syndication, podcasting, etc. – are ideally suited to learner-centred as well as collaborative approaches in developing competences required in our knowledge society. They are already widely used outside the educational sector, with first spill-over effects into the sector that have stimulated experimentation by teachers and students in universities, colleges and schools. Wikis probably take the lead because of the ease of collaborative Web-based authoring and publishing they provide. Also Weblogging sees interesting uses and reports on the educational impact are favourable. Furthermore, there are many highly active "edubloggers" who write about a wide range of themes from general questions of pedagogy and didactics to highly specific issues in certain fields of study and learning. Wikis and Weblogs of course are not the only educationally relevant Social Software based tools and services. For example, some observers suggest that also popular online community, content sharing and social networking services like 360°Yahoo!, ConnectViaBooks, Del.icio.us, Flickr and Furl could be used to enhance e-learning.

## Outlook and recommendations

OLCOS and other observers of the e-learning landscape think that the potential of Social Software based tools and services in education and lifelong learning is clear. However, many actions will be required across policy, practice and developer communities before it becomes widespread and effective. These actions will particularly need to take into account that today most teachers are expected to work with too many students, they are not equipped with the right didactics for moderating learner-centred, collaborative study work (hence, are afraid of losing control), and there exists little experience in assessing and crediting the results of such work. Therefore OLCOS thinks that it will take several years for the educational use of Social Software based tools and service to become mainstream, which is more likely to occur in the area of project-based learning than in "regular teaching". A slow process of diffusion, experimentation and adoption is to be expected rather than a fast transformation of educational practices. The OLCOS roadmap provides recommendations for all relevant stakeholders in open educational practices, from policy makers to students. In particular, it suggests that if learner-centred and collaborative educational approaches are emphasised and supported by directors, head teachers and IT managers of educational institutions, the first choice of teachers and students would certainly be to make use of Social Software based tools and services in developing meaningful, rich and open teaching and learning practices.

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# OPEN COURSE, OPEN CONTENT, OPEN EDUCATIONAL RESOURCES – A CHALLENGE FOR EUROPEAN UNIVERSITIES? STATUS QUO, FUTURE, AND PROBLEMS OF OER-INITIATIVES IN AN INTERNATIONAL PERSPECTIVE

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The paper presents results of an international comparative study on the dynamics of the OER movement in higher education. It gives an overview of the different projects and initiatives and their geographic spread. In a detailed analysis of 36 selected projects, their type and content, business/organisational and licensing models are systematically examined. Furthermore, the motives, problems (copyright, costs, cultural and didactic challenges etc.) and possible solutions are presented. A brief summary of the results is the following:

- The offers available worldwide cover **almost all regions**. Their concentration is much lower in Eastern Europe and Germany. In Asia, in particular, many higher education institutions have joined up into networks. Due to subsidies from foundations, there are also numerous initiatives in Africa. Throughout, external means such as subsidies or foundations play a central role in the upkeep of OER offerings, which may have consequences on the sustainability of these offerings.
- When OER initiatives describe their **content**, they usually cover the entire spectrum of higher education subjects. A specialisation on certain subjects is rare. However, in some cases additional service issues, software and consultancy offers are included. Particularly in the case of MIT content, one may already speak of a form of “content syndication”, as for instance the higher education association of the African Virtual University adopts this content into its course programme.
- The **forms of presentation** also differ immensely. Completely virtual study programmes are predominant, or at least complete courses, in many cases also additional course materials. These forms are also offered by distance universities – thus it is difficult to determine the boundary to OER offerings, even if distance universities charge participant fees. Complete course offers also do not imply that the content may be exploited in another form (in terms of the Creative Commons movement).
- In rare cases only the forms offered contain **communicative** and **collaborative elements** (Web 2.0).
- Many portals are dominated by offers **in the English language**. This surely is an indirect access limitation for the larger part of the population in the African or Latin-American countries. At the same time, these OER offers reach the academics and management elites of a country, who master English as a foreign language. This is an advantage for English-speaking providers from the USA, Great Britain, or Canada.
- The fact that many initiatives tend to assume closed course offers also becomes evident in that they do not capture or display any **metadata** for their content. This makes it difficult to further utilise individual modules in other learning contexts.
- Currently, many OER offers depend on public **subsidiaries** or private funding. Occasionally, **course fees** are charged, but these hardly cover the personnel costs for the necessary supervision and tutoring. Obviously, this form of financing is the logical consequence from the demand for “open content” in the sense of “free education”. Sustainability is therefore always dependent on the goodwill of external financiers. Some initiatives at least have chosen to charge fees to the higher education institutions using their content or to learners who are not enrolled at any institution.
- **Adding own learning content** is in most cases the prerogative of academic teachers and teaching assistants. That way, the portals ensure a certain level of quality, but – other than, for example Wikis – exclude content which may be of interest to learning and teaching at higher education institutions.
- Concerning **user access** to the OER portals, many initiatives follow the idea of dissemination of content to everybody, though in some cases users must register. For those initiatives which only address students in their own country it is hard to differentiate themselves from higher education associations. An interesting idea is to grade access to content according to interest, prior qualifications and, if applicable, advance payment of fees (e.g. regular tuition fees).
- The **further utilisation of content** or the modification thereof is not planned for in the majority of cases. The offerings (with the exception of six portals) thus contradict the spirit of the Creative Commons movement. Instead, the initiatives tend to build on valid copyright laws and established scientific citation forms. This surely protects the authors, but at the same time it constricts the development of new learning content.

The study shows that in the recent years a lot was achieved world-wide in the field of Open Educational Resources, and that it continues to be a highly dynamic field. However, the heterogeneity of the offerings suggests two main stipulations:

- Improved communication of what is on offer through higher transparency of web portals and increased use of metadata;
- As a basis for this: a clearer definition of the central characteristics of OER offerings (financing model, group of addressees, forms of presentation, authors, access, specialised content).

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## ICAMP PORTFOLIO OF INTEGRATED OPEN SOURCE E-LEARNING TOOLS AND SYSTEMS

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Web 2.0 has brought along simple and open personal publishing technology called social software (blogs, wikis, social bookmarking, podcasting etc.) next to the closed proprietary institutionalized learning management systems (LMS). The increasing heterogeneity of landscapes of systems and tools makes the discovery and selection of most appropriate technology enhanced learning (TEL) tools for higher education more and more complicated. Oncoming trend of Web 2.0 technologies in e-learning provides challenges in terms of decision-making and the ability in narrowing the selection of choices of most suitable tools for the institution as well as for individual learning purposes.

Current evaluation and selection methods of software focus on the comparison of LMS based on a set of functionalities indicating whether each product offers a particular feature, or not. Current reports and approaches show the importance of institutionalized closed and commercial learning environments leaving aside social software and its applications, which prevents the opportunity to compare LMS and social software. They concentrate mainly on the evaluation needs of institutions and serve the individuals perspective only to a very limited extent. Consequently one dimensional comparison approach does not give the required overview of the entire system or tool and does not allow comparing systems and tools from different perspectives.

We propose that our alternative method with multidimensional perspectives based on a soft ontological approach is more appropriate. The LMS comparison frameworks like Edutools.net have established a fixed ontology for e-learning systems and tools that allow comparing the LMSs on "objective" basis. Soft ontologies can be defined as explicit specifications of conceptualizations of information domains in a way that allows the weights given to its individual elements as well as its overall dimension to be flexible and negotiable. Ontologies conceived of as being something "soft" or malleable rather than something absolute can be involved as a part of the interactive setting, and be made explicit and accessible to the user, who is also given the control over the ontology in terms of weighting, adding or deleting (equal to ignoring) descriptive properties of e-learning systems and tools. In this way, each user can form his or her own personal perspective to a set of tools.

Our purpose is to develop a broader scope of the tools portfolio within the iCamp project ([www.icamp-project.org](http://www.icamp-project.org)) with an accurate and explicit description scheme for tools and systems in order to support the combination of abstracted didactical patterns with specific tools and systems. We aim at developing a decision support system based on a soft ontological approach facilitating the selection of TEL systems and tools which connects the combination of pedagogical activities and tool functionalities. Being based not only on a simple hierarchical taxonomy, the iCamp tools portfolio encompasses a description of multi-dimensional perspectives and enables a selection of TEL systems and tools along different dimensions. In addition to predefined list of perspectives users can add their own and share it with other users.

The selector tool thus enables a user to investigate different TEL systems and tools, which have been added to the portfolio of tools beforehand according to different pre-selected perspectives with the respective numerical value. The values reflect the TEL systems and tools' capabilities to support different perspectives. Users of iCampFolio can set the values to each pre-set ontological dimension or dismiss these dimensions completely and replace them with their own, self-defined properties of the e-learning systems and tools.

The usability and applicability of iCamp portfolio in higher education will be evaluated using participatory design research. At this juncture empirical research of iCamp portfolio is work in progress.

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# LAW AS OBSTACLE OR AS SUPPORT? RELATIONS BETWEEN CREATIVITY AND CONTROL

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## Traditional Copyright

Collaboration is one of the major paradigms for Web 2.0. Collaborative content creation promises new realms of creativity and new freedoms. Web 2.0 as a social web allows collaborative content creation by modifying texts, pictures, films and graphics into material for the next blending.

Sharing digital learning content is connected with the legal concepts of intellectual property rights. Therefore a concept of supporting content sharing has to be based on the legal concept of copyright. If you want to share your works and want to get the protection of law for that, you have to face a very complicated obstacle. While the texture of Web 2.0 is borderless, copyright systems are characterized by the interplay of national law systems and international treaties. Discrepancies between national law systems are an expression of the national culture within a state. On our quest for a legal concept shielding content sharing, we have to consider also the most important international treaties. Treaties like the Revised Berne Convention, TRIPS and WCT treaties and an EC Directive on Copyright Harmonisation in Europe are scrutinised for concepts concerning content sharing. Several gaps in legal coverage are detected. Within the national law systems of Germany and Italy antinomies and fuzzy definitions are described, which lead to severe uncertainty in understanding legal requirements for users.

## Creative Commons

The system of Creative Commons licences is described. Licenses can be constructed using an online construction kit. Aspects like commercial use, modification and condition for sharing can be chosen according to own plans. Branches of the Creative Commons community spread around the world (International Commons) created valid license elements for meanwhile 34 national law systems (e.g. France, Italy, Japan and Germany, Australia). Licenses for 9 other countries are currently in the process of development (e.g. Ireland, India, Switzerland). Meanwhile the licenses have reached the dissemination phase to some degree, thus they can serve as a basis for international content sharing.

Regarding the sound structure of Creative Commons licenses, it is very easy to detect differences between the licenses adapted to national law systems. Without such a system, you would have to consult law experts for detecting differences, which would lead to significant investments in time and money. But nevertheless, diverging rules in national law systems must be obeyed. Clearly structured licences cannot overrule differences between national law systems. The licenses are not able to overcome the core obstacle for unlimited sharing: restricting rights of other right holders have to be obeyed. Also the restricting rights are an expression of the right holder's power to define terms of usage. Here we find an absolute border for all attempts to establish a legal shield for content sharing: You may not breach the rights of others. Therefore the Creative Commons organisation requires: "Make sure you have the rights".

For authors there is an additional way to contribute material to the community: make your material (which does not harm others) available on an internet server and do not care who, how uses it. That would be no longer a question of law<sup>1</sup>.

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<sup>1</sup> Using a "Public Domain" license would cause problems in many European law systems.

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## EFMD CEL PROGRAMME ACCREDITATION FOR TECHNOLOGY-ENHANCED LEARNING – LESSONS LEARNED FROM ACCREDITED PROGRAMMES

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The European Foundation for Management Development (EFMD) and the Swiss Center for Innovation in Learning (SCIL) have jointly set up the EFMD CEL quality scheme for management-development programme accreditation with a particular focus on technology-enhanced learning. It has been in operation since 2004.

The following programmes have yet been accredited (in chronological order, on top the latest accreditation):

- Online MBA Programme of the University of Liverpool, UK
- Executive MBA, KMI - Kavrakoglu Management Institute, Turkey
- Online Master of Distance Education, University of Maryland University College (UMUC), USA
- L'Oréal e-Strat Challenge Business Game, L'Oréal, France
- Online MBA Programme, U21 Global, Singapore
- Professional Diploma in Management, Open University Business School, UK
- The Job Family Development Program, Vehicle Electronics, Volkswagen Coaching GmbH, Germany

These seven programmes are spearheading the quality management approach of EFMD-CEL and represent exemplary good practice of technology-enhanced learning in management development. The quality of their programmes has been evaluated on the base of 30 CEL quality criteria materialized in two documents: a self-assessment and an audit-team report. The quality criteria relate to the programme and its pedagogical, economic, technological, administrative, and socio-cultural dimensions as well as to their interdependencies.

EFMD has initiated a survey that is currently undertaken in order to get to know the lessons that can be learned from these awarded technology-enhanced programmes and their quality management.

The paper will provide insight into the quality management approach of EFMD CEL, a short description of each of the seven CEL-awarded programmes, and will present findings from the analysis of these best practice examples concluding on lessons learned. The lessons learned derive from the accredited technology-enhanced programmes. In particular, it will focus on best practices with regard to strategic aspects of each programme, pedagogical as well as organisational and administrative dimensions. In sum, the paper will provide insights into best practices of the organisation, implementation, and evaluation of technology-enhanced programmes.

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# DEFINITION OF AN E-LEARNING QUALITY MODEL AND ITS APPLICATION CASE STUDY AND RECOMMENDATIONS

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## Problem Statement and Model

The goal of this study is to i) propose a model for e-learning quality evaluation and ii) to understand the reality of e-learning in the IHE (Institutions of Higher Education) in Portugal and, based on a set of Critical Success Factors (CSF), prove that the initiatives of e-learning are efficient, and also to assess quality indicators. The results are expected to be a contribution, mainly for managers of institutions of education, but also for managers of companies, for planning, implementation and evaluation of e-learning courses with success.

The proposed model of analysis consists of nine independent variables and one dependent variable, which define a measure of E-learning Effectiveness for each analyzed case. The following are the independent variables: Institutional Support; Course Development; Teaching-learning Process; Course Structure; Student Support; Faculty Support; Evaluation and Assessment; Rewards given to the IHE; Competition from other IHE. The latter two are non-controllable variables while the former seven are controllable variables.

In this context E-learning Effectiveness is the presence of the CSF that defines e-learning quality in each IHE. The classification of the levels of E-learning Effectiveness is directly related with the degree of presence of these CSF in each IHE and it has been used a Likert scale to fit answers (from 0 - CSF are not present in the IHE to 5 - CSF have a very high presence in the IHE). The specification of the investigation hypotheses has determined one first focus on the information to collect.

## Case Study in Portugal and Conclusions

This case study consisted of an analysis of the Portuguese IHE with e-learning projects, using qualitative research and specifically a Case Study.

There are several conclusions that were drawn regarding the model and the case study, resulting in the following main recommendations:

- Promote and prepare the institution for e-learning – involve the top management, select multidiscipline project teams, prepare training sessions for intervening and spread the idea and the objectives of the project in the institution;
- Analyse the needs of the project – identify the real necessities of the learning clients, select the appropriate courses (or modules) for the e-learning project, according to objectives, define and characterize each one of the courses;
- Select technological partnerships – select the platform, type of access and personalization of the technological environment, based on identified necessities and budget available for the project;
- Select pedagogical partnerships – guarantee development, adaptation and standardization of educational multimedia contents;
- Execute the e-learning project – set the background of the e-learning project, define its structure, investment, exploration and the expected operational results;
- Measure the e-learning impact – make the pedagogical evaluation of the project, measure the satisfaction of the intervening, guarantee and evaluate its effectiveness in educational terms and in the investment made.

The adoption of e-learning, if implemented in accordance with best practices recommended by specialists on the subject, can be taken as a requirement for a modern and adjusted Higher Education in the Information Society. Finally this can be used in other countries with similar situations where these recommendations can be set forward to effectively implement e-learning initiatives with good quality.

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## ASSESSING THE QUALITY OF E-COURSES

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It is challenging to support and enhance quality management in e-learning. The need for quality management in e-learning has risen since the use of e-learning has expanded. We have to find answers on the following questions: how is quality defined, how can quality be assessed?

The EFQM model of quality management is a universal model and is applied in this paper in the school context for the organisation of e-courses. We identified some quality criteria in this EFQM school quality model taken also into account the criteria of the Kirkpatrick model.

We defined a simplified e-learning EFQM model supporting the evaluation by the learner.

The EFQM Excellence Model is a practical tool to help organizations do this by measuring where they are on the path to excellence, helping them understand the gaps and then stimulating solutions. D. Kirkpatrick presented a four-level model of quality assessment, that can be applied to traditional way of learning and also to e-learning.

We identified a set of quality criteria in the EFQM school quality model.

We developed a simplified e-learning EFQM model.

In most cases evaluation will be limited to the learners' evaluation task and so the TQM model will be limited to a subset of criteria, namely those that can be measured by the learner. In that case, the evaluation itself is limited to a subset of the EFQM criteria domains.

Following our concept, we developed our questionnaire in a three-level structure: 3 main criteria, each containing more criteria which consist of more subcriteria. Questions are linked with those subcriteria:

- The Main criteria:
  - The enabling learning resources
  - The enabling Learning Processes
  - The learning Results
- Criteria
- Sub-criteria and questions

Based on it a questionnaire has been structured that can be used for the evaluation by the learner.

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# QUALITY ASPECTS OF WEB COURSE DESIGN: TRAINING BASED ON TOPIC-CASE DRIVEN METHODOLOGY

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## Introduction

Most of the web courses at the university level (at least in Finland) are still implemented without any written documentation or proper pedagogical design; most of the teachers do not even know where to start and how to proceed. We knew that teachers and professionals at the local university (University of Jyväskylä) were willing to try web-based learning and teaching in their own lectures, but most of the support they were initially able to get was related to technological support, e.g. use of different platforms, video recording and editing of lessons, Flash, and videoconferencing. In our case, however, comprehensive support was not available for design process as a whole (so-called "rooming-in" individual hand-on-hand guidance was available).

To help teachers in their web course design process we planned different kind of workshops for teachers where they could work with design project and get support, guidance, and tips, when needed. The goal was to find best practices for web course design training with case studies by modifying educational methods, roles, scheduling, and grouping. The starting point was the "rooming-in" individual hand-on-hand guidance that is too time-consuming and takes a lot of guiding resources. The planned workshops are based on Topic-case driven methodology for web course design that utilizes metaphors from software engineering to describe a unified way to design and realize web courses. The used methodology was first introduced in ICNEE 2004 (Hiltunen & Kärkkäinen, 2004), and first experiences from using this methodology with students of computer science teacher education were introduced at EDEN 2005 Annual Conference (Hiltunen & Kärkkäinen, 2005). In this paper, we describe results from two web course designing workshops where university teachers and professionals designed web courses for they own teaching duties by following Topic-case driven methodology. The results from the workshops are very encouraging.

## Case study workshops

Learning-by-design workshop was organised for a small group of local university teachers and professionals from different educational fields. The main educational focus was on learning by design. Participants worked with their own topic and design goal: to design their first own web course.

The learning network workshop was organized for seventy university teachers from different Finnish universities. The main educational focus was on learning networks and reciprocal teaching. Participants worked in groups (nine multidisciplinary groups) to prepare someone's single topic and the goal was to design only a skeleton of the final web course so that the group members could learn how to follow the design process by themselves later on. Moreover, working in groups was structured with six different roles or hats to wear for participants.

## Results from case study workshops

Most of the educational institutions do not use any particular design and implementation model in web course authoring. Based on these case study experiences, teachers need more guidance and unified ways to proceed on design process. Teachers do not need to work alone while designing their own web courses. Design process can be supported with "rooming-in" individual guidance (not cost effective), Learning-by-design workshops (tailorable and more cost effective), and Learning network workshops (reciprocal and more cost effective). With the phased design model web course design and realisation can be divided into smaller parts and thus quality assurance is easier.

Participating in the workshop helped teachers to find enough time to do the required planning that they would not have done in time without the workshop schedule, and working in groups was considered as a positive experience. Teachers got a lot of new ideas and tips for the design process as well as encouragement. Moreover, teachers were very pleased to get a phased process model to guide what to do and when – this kept driving them forwards. The phased process model also divides large project in smaller pieces that are easier to handle.

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# OSCAT – ONLINE SKILLS ANALYSIS AND COMPETENCE TOOL SKILLS DIAGNOSIS FOR EUROPEAN SMALL BUSINESSES

*Jo Pye, Marchmont Observatory, University of Exeter, UK*

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## The Leonardo da Vinci eAssessment Project

The eAssessment Project is a Leonardo pilot project developing a diagnostic skills assessment software tool for European small to medium sized enterprises (SMEs). For these audiences, the application of technology based skills diagnostics – coupled with appropriate learning strategies – provides a flexible learning environment that can be tailored to suit individual business contexts. The aim of the project therefore is to trial innovative ICT applications that will enable small businesses to analyse the training needs of individual staff and select an optimal learning strategy within a business context. Target audiences were envisaged to be trainers, training developers, business advisors who work with elearning and learners in SMEs, employers and staff in small and larger companies, careers advisors, educationalists, and researchers.

As part of development of the training needs analysis tool (OSCAT) resulting from the research, the project has tested and validated successive stages of the project through ongoing consultation with representatives of target audiences. A fundamental assumption was made by the project team that, unlike larger businesses, SMEs were unlikely to be able to draw on the specialist expertise of a dedicated in house human resources (HR) department. It would therefore be useful for SMEs to be able to access human resources services within their business that would not otherwise be available to them.

## Methodology

The following interrelated stages were integrated into project design and will be further explored in the session:

- Preliminary literature review
- Conceptual design
- Initial tool development
- Consultation with experts
- Secondary tool development
- Piloting with user groups

## Consultation Findings

It was essential for OSCAT tool design that experienced personnel familiar with guiding SMEs' learning needs as well as facilitating technology were able to contribute their input to the development process before tool features were finalised. Consultation was carried out with two sets of stakeholders: initially in the UK by experts in elearning both remotely and face to face, and subsequently in European partner countries by practitioners experienced in assessing small business needs. Feedback from all those testing the tool was captured with semi-structured questionnaires and suggestions for improvement incorporated into the tool wherever practicable.

Providing appropriate and authentic feedback for end users is an important feature of the resulting OSCAT product. For maximum effectiveness, this needs to be coupled with guidance skills by practitioners working with small business staff. Practitioners agreed that staff would benefit from targeted training in order for them to be able to utilise the tool to its fullest potential to complement their own skills, and make it truly relevant for individual small business audiences.

The EDEN presentation will include a demonstration of the OSCAT tool, together with presentation of findings and recommendations from testing by the tool's UK European target groups.

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## THE PRACTICE OF E-LEARNING QUALITY ASSESSMENTS

*Rik Dalle, Eduwest.be, Jeanne Schreurs, Univerisiteit Hasselt, Belgium*

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This paper is a report of our research made in the frame of the SEVAQ project. SEVAQ ([www.sevaq.com](http://www.sevaq.com)) stands for self-evaluation of quality in e-learning. The SEVAQ project is developed within the framework of the Leonardo da Vinci Program.

Our research was focused on how learning companies or learning departments are organizing the process of gathering feedback from the learners and how they are using the feedback. A questionnaire can be used for self assessing an e-learning course by the learner. It seems that all respondents are using not only questionnaires but other evaluation methods as well.

We selected a set of companies (profit and non-profit) and educational institutes which had already implemented e-learning in their training programmes, and we established an enquiry into the quality of existing evaluation tools and methods used by them.

These organisations have answered questions about how and which feedbacks they receive. Their own assessment questionnaires were also sent to us, and have been evaluated by checking the availability of the criteria as set forward.

But what is the quality of their questionnaire? Based on the first two levels of Kirkpatrick model, we identified a set of quality criteria that must be part of a self assessment questionnaire to be used for the evaluation of the e-learning application by the learner. We identified a set of 18 sub-criteria spread over the 4 main criteria: content delivery and tutoring, technical specification and organisation.

This set of quality criteria has been used to evaluate the 152 questionnaires that we received and were used in the evaluation activity of our sample of companies and institutions. The quality of the questionnaires has been measured and it is also related with the characteristics of the respondents.

The questionnaires that we analyzed are of poor quality. Only the first main criterion "content" and its sub-criteria are included in most of the questionnaires, although still not complete.

The questionnaires of the providers are of higher quality than those of the users, and the educational institutes are doing better than the companies.

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# A COMPARATIVE EVALUATION FRAMEWORK FOR E-LEARNING SYSTEMS AND TOOLS

*Peeter Normak, Mart Laanpere, Tallinn University, Estonia*

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## Web 2.0 and challenges to institutional LMS

During the last five years, the processes of LMS selection and implementation in Estonian universities have rapidly changed towards centralisation, regulation and homogenisation. As a result of this change, the concept of "E-learning" has become synonym with „using the institutional LMS". However, in a life-long learning context the universities should assure that all graduates are not only digitally literate, but are belonging to the virtual communities of professional practice and are able to make use of the vast global knowledge space. This challenge is not easy to meet if the university students are trained to perform knowledge building activities only in highly specialised environment (LMS) which is not accessible by them after their graduation. Additionally, some new trends are emerging in European higher education which seem to conflict with the monopolist role of closed institutional LMS in e-learning, for instance: 1) development of joint modules and curricula in cooperation by different universities, 2) visiting lecturers are increasingly using the e-courses hosted in their home universities, 3) students and teachers are increasingly using social software. Unfortunately, most of the monolithic, closed and institutionalised LMSs used by the universities do not fully meet the new needs of academic staff and learners.

Until recently, e-learning was implicitly associated with the use of specific learning technology like Learning Management Systems and Learning Object Repositories. The Web 2.0, or the 'read-write' Web, changes the technological landscape of e-learning significantly. Once the learners and facilitators get used to the autonomy and flexibility provided by social software (blogs, wikis, podcasts, social networking and recommendation systems, RSS aggregators etc), they will most probably lose their interest in closed and rigid institutional Learning Management Systems. Thus, the task of comparing and selecting the LMSs should involve the analysis of "Web 2.0 readiness" of the systems. Yet, this most challenging task is not related with the analysis of the technical aspects of LMSs, but with comparing the pedagogical affordances of the e-learning systems and tools under study. Pedagogical affordances of an e-learning environment can be interpreted as properties of the environment that enhance pedagogically meaningful activity patterns. We propose to use the activity theory and pedagogical activity patterns for defining the pedagogical affordances of e-learning systems and tools.

## EST framework

Estonian E-university was established in 2002 as a consortium of the 8 largest public and private higher education institutions in Estonia. Estonian e-university purchased a consortium license for WebCT Campus Edition in 2004, this license will expire in the end of 2007. In order to decide whether to prolong the licence or switch to different LMS, Estonian Information Technology Foundation initiated development of more objective and flexible evaluation framework for comparing different e-learning systems and tools (referred below as EST *evaluation framework*). This paper discusses the requirements and model for EST evaluation framework and demonstrates how this framework is planned to be used for determining the most suitable LMS for universities and vocational schools in Estonia.

Our framework for evaluating e-learning systems and tools includes three categories of indicators: pedagogical affordances of systems and tools, indicators that describe migration of courses between the systems, indicators that describe other aspects of learning management systems (interoperability, purchasing and maintenance costs, technical sustainability etc). Comparative analysis is carried out with the following methods: multidimensional scaling of pedagogical affordances, critical incident analysis related to migration of existing courses from WebCT, checklist analysis for other aspects. The evaluation involves three groups of data collectors: analytic group (providing activity patterns and assessing related pedagogical affordances of systems and tools), action researchers (lecturers who try out the new systems for a full scale course) and testers (assessing interoperability, migration, costs etc). We shall present the first results of the pilot implementation of EST evaluation framework.

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## TUTORING QUALITY CONTROL IN POLISH VIRTUAL UNIVERSITY – PROTOTYPE BASED CATEGORISATION MODEL

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Teaching practice in the e-learning educational system is the subject to a multi-faceted control and evaluation procedure as the assessment of the teaching methods and techniques constitutes one of the quality assessment tools applicable in the whole of the educational system. It aims directly at establishing general standards sustainable in teaching process. The conclusions formulated on the basis of assessment data analysis also allow to: upgrade teaching methods, develop individual pedagogical competences, enhance effectiveness of the educational process and build up student's satisfaction. It is presumed that achieving these goals is possible only if the assessment data is reliable (the assessment process as well as the method itself, is systematic and free of interpretation error), accurate (complexity and scalability of the process are considered) and objective (measurement criteria are clearly defined). Practice has shown that on the way to create such a complete and coherent assessment system of tutor work in an online educational institution one may encounter major obstacles. It is not a reliable measurement which depends fully on the results of students' questionnaires, since obtaining a statistically valuable evidence from more than 50% of the students surveyed is difficult. On the other hand ignoring students' opinion may evidently depreciate accuracy of the measurement. The article aims at presenting the crucial problems (turning into paradoxes while analysed thoroughly) which an educational institution faces while adopting a complete system of tutoring quality assessment. These problems and questions are stated in the article, but the answers are to be formulated in the course of further research and analysis. The method described in the article allows to identify and outline tutoring phenomena which are peripheral, vague, indistinct, diffusive or scattered to such an extent that they become elusive enough to escape most systematic, objective evaluation models.

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# MEDIA AND VOLITIONAL LITERACY – IN THE ERA OF WEB 2.0

*Olli Vesterinen, Heikki Kynäslähti & Seppo Tella, University of Helsinki, Finland*

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## Introduction

In this presentation, we first analyse the relationship between distant students and the institution that s/he was working with. Second, distance education and 'traditional' literacy are seen against some new developments put forth by the era of Web 2.0. Third, we analyse media education from four approaches, with a special view to some recent challenges that Web 2.0 invites us to face. Media education has traditionally emphasised the importance of individual people's own personal media literacy. We argue, however, that individuals' own content production is becoming increasingly significant. In addition to this growing proactivity of individuals' activities on the web, new ways of categorising information have emerged in the form of folksonomy. To clarify these developments from the perspective of distance and media education we introduce the concept of 'volitional literacy'.

## Distance Education and Literacy in the Era of Me

The American magazine Time claimed in 2006 (Vol. 168/26) that this is the era of You, and from the perspective of a student, Me. The distant student's independence and autonomy have been common concepts in the theory of distance education. A crucial question still remains: is the distant student able to make decisions upon his or her own studies? 'To be able' includes two aspects: first, whether the student is *allowed* to make decisions, and second, whether s/he is *capable, competent and proficient enough* to make these decisions. This latter concern is our perspective in this presentation. We will discuss literacy against the backdrop of distance education in the era of Me, as seen through the 'cycle of media education', which will be introduced in the presentation.

## Volitional Literacy

We argue that one way to meet the challenges that Web 2.0 is offering is volitional literacy. It is our way of looking at media literacy, which, as recent concepts so often, is expansive in the sense that latest technological developments can only be incorporated into it if we accept the conceptual broadening of the original idea. This is exactly what Web 2.0 is doing to traditional media literacy, breaking down its barriers and inviting if not forcing us to include and embrace present emphases in it. In our opinion, the basic question is of volition, in other words, of individuals' own will(ingness) to do something that they find relevant and meaningful to their own lives, even if it takes some time, effort and energy. To our way of thinking, volitional literacy is exactly something that can help us assume a fair command of all that potential that Web 2.0 provides us with: social networking, collaboration, self-initiated media production, self-determination. Volition in our thinking does not only imply a certain degree of autonomy, one of the basic constructs in distance education as well, but also self-directedness and a conscious feeling of being empowered in the sense that media gives access to various modes, patterns and ways of influencing other individuals, both emotionally, rationally and socially – albeit virtually – when being logged on to the net.

This is a multidirectional, transdisciplinary way of overtaking conventional power hierarchies and established production-publishing-dissemination structures. Volitional literacy is something that enables most (if not all) of us to take individually-determined control of the net, though at once permitting all of us to cooperate and to collaborate in various ways among and between ourselves. What really counts in volitional literacy is that it is not grounded in any authorised position somebody might have officially; rather, it is solidly based on an individual's own proactivity and willingness, in other words, volition, to use his or her own knowledge, skills and expertise for the common good, for altruistic purposes. We argue that volitional literacy, when seen in the light of Web 2.0, is extremely significant, as it allows to create, change, exchange, store and swop information in ways that have never ever before been accessible, permissible or available to any single individual since dawn of mankind.

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## NEW MEDIA: CHOOSING THE RIGHT OPTION AND ALIGNING WITH LEARNING OUTCOMES

*Russell G. Colbert, Jr., Polycom, USA, Carol Daunt, LearnTel, Australia*

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This session will provide participants with the knowledge and resources necessary to make informed decisions and use of various new media. The session will highlight how these media applications can be aligned for specific types of learning objectives, including the selection of specific media, applications, and the assessment of learning outcomes.

### Background

Distance education's evolution from a print-based correspondence study model to complex, integrated multi-media applications has transformed the capacity for delivering education and training today. Moreover, the traditional concept of 'distance' has become unintentionally confusing and perhaps obsolete . . . students take online courses today 200 meters from their professor's office, still in their dormitory (and pyjamas) and they learn via desk-top video 10,000 kilometres away. Indeed, as the sophistication continuum of new technologies continues to change rapidly, the questions we must ask actually are relatively simple ... how do we deliver quality education effectively and efficiently – with or without technology? (this question has not and should never change simply because technology exists?); how do we know these technological toys are doing what we purport they are doing – or are we speculating?; and finally toys cost money and who will be left out, excluded from access ... will the 'Digital Divide' become the Global Digital Divide? Technology, in and of itself, is not a panacea for solving all the issues on the planet, in fact, technological advances usually create more problems.

### New Media

In order for educators to make informed decisions about the use of new media, they need to know what options are available and how these can be accessed. We will review the following new media applications, discuss best practices and provide international case studies on how others are using these mediums effectively:

- Web conferencing
- Videoconferencing
- Social software
- Podcasts

### The Future

We will take a look at the emerging technologies and discuss how these will affect teaching & learning.

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## COOPERATION BETWEEN UNIVERSITIES AND PUBLIC SERVICE TV AND RADIO IT REALLY WORKS

*Bo Malmström, University of Gävle, Lasse Bourelius, Blekinge Institute of Technology  
Brittmarie Myringer, Mid Sweden University  
Gunilla Sterner Kumm, Bo Svanteson, UR - Swedish Educational Broadcasting Company, Sweden*

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**Background:** For several decades Swedish universities and colleges have worked together with public service television and radio on distance education. The UR programmes are broadcast nationwide and play an important role in general non-curriculum adult education. Students have access to the programmes streamed via Internet and through Learning Management Systems (LMS). Sometimes entire programmes are used, sometimes they are designed as so-called learning objects. The network organization SNH – Cooperation for Academic Net Based Learning – is a forum for cooperation between four universities and UR, the Swedish Educational Broadcasting Company. The universities are Luleå University of Technology, Mid Sweden University, University of Gävle and Blekinge Institute of Technology. The SNH cooperation is about Internet based, flexible learning and is focused on the development of courses and learning objects.

**Online distribution:** A new system for digital distribution is being tested. UR transmits programmes and learning objects to the universities. Ten universities have established a common media server where the materials are stored. From this server the programmes can be reached as streaming video or audio in closed-circuit networks or made available on DVDs. The university libraries have an important role to play in providing information about the digital distribution and the programmes. All the programmes are available free of charge. This has been possible because of a copyright agreement between UR and Copyswede, the umbrella organization that represents “rights” holders and performers in Sweden, and the universities.

**Web 2.0:** The trend in Internet education has been towards an increase in interactive software, that is to say from the one-way flow of information to interactivity and web 2.0, social software. In our new digital distribution system learning objects produced by UR and by instructors and students will be available. Instructors and students can access programmes, comment on them, send suggestions to friends etc.

**A concrete illustration:** Two internet based courses in care of the elderly were developed in a partnership that included UR, the universities, the Swedish Municipal Workers' Union and the Swedish Association of Local Authorities and Regions. The target group was employees who had no previous experience of higher education. The courses were five week full time courses paced at a quarter of that of a full-time student. TV- and radio programmes were broadcast when the courses were run for the first time. Learning objects were developed and included in the course participants' platforms as integral parts. Besides traditional course literature the programmes and a special website played an important part in stimulating students to learn.

**Evaluation:** The evaluations have shown that multiple tracks of audio and visual information convey powerful learning benefits, such as each source complementing the others. The several modes provide multiple entry points into content, and thus offer greater accommodation to the “multiple intelligences” found in a diverse group of students. The programmes had a powerful ability to convey experience through the emotions evoked by images. This was very useful in the learning process.

**Some conclusions:** It must be easy for instructors and students to search for, find and use relevant and quality declared programmes and learning objects. There must be search systems and databases that are natural for students and instructors to use. It is essential that learning objects be described with good metadata resources and it is necessary to increase the media pedagogical work that is aimed at teachers.

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# TRAINING WITH DIGITAL TERRESTRIAL TELEVISION – “TERRITORIO DIGITALE” THE T-LEARNING PROJECT FOR PROVINCIA DI ROMA AND REGIONE LAZIO WITH DIGITAL TERRESTRIAL TELEVISION

*Walter Gatti, K COMMUNICATION SpA, Italy*

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## Project short presentation

K COMMUNICATION – an Italian EDEN member – in 2006 operated a large training project with Provincia di Roma (the territory surrounding Rome) and Regione Lazio regarding the training activities for employers and operators of the local authority. The project – named “Territorio Digitale”<sup>1</sup> (Digital territory) – trained over 3000 employers and volunteers of the Provincia using the DIGITAL TERRESTRIAL TELEVISION (DTT).

The project involved also RAI, the first national television broadcaster and the ToCareTelevison (TCT) consortium, and is formed of forty lessons (40), divided in three training courses:

- First level: Protezione Civile course for operators and volunteers of Provincia di Roma.  
The project, implemented with the Protezione Civile (national institution), with the Corpo Nazionale dei Vigili del Fuoco (national institution) and with the the Corpo Forestale dello Stato (national institution), was divided in sixteen lessons and trained a 3000 volunteers group on the emergency thematic.
- Training course on the Autorizzazione Integrata Ambientale.  
The project was divided in sixteen lessons and trained 200 employers on the ambient thematic.
- Training course for Uffici Tecnici in tema di gare d'appalto.  
The project was divided in eight lessons and trained 100 employers of the Provincia di Roma districts on legal and administrative thematic.

## Why the training on DTT

The trainers took part in the training courses at home or office, using the DTT technology. The relationship between K COMMUNICATION, TCT and RAI developed a t-learning system that has permitted interactivity with teachers to over 3000 adult-students during the lessons, using the DTT zapper in real time.

## Project activities and attended results

The project was implemented to guarantee a high training effect. The three areas of different training were developed considering the most important elements of the K COMMUNICATION-TCT-RAI DTT training system:

- Contents and target identification. It is the starting element to make a good quality training product.  
The right contents and target identification permitted a project development with an excellent communicability and learning.
- High interactivity level and check test. Interactivity is the force point of the TERRITORIO DIGITALE project.  
To have positive feedbacks and an opportune check tests system, it was important to analyze the training projects objectives using the most appropriated interactivity ways.
- Training editorial staff. The editorial staff of K COMMUNICATION concurred to the contents programming and implementing for the TERRITORIO DIGITALE lessons. It was an applicative support for teachers and a guide for the training and for the DTT lessons.
- Technical sustainments and complement instruments (for example: web site) for a multimedia confluence.  
For the project development an interactive portal or software platform (tool) with video usability and navigability attributes was given which permits the contents administration for the training events (which were, in a second moment, replicable on the institutional web sites of the structures that offer the training).

## Conclusions

The link between the contents perfectly adapted to the referent target and interactivity permitted to reach to the objective: an effective and exhaustive communication, information and training activity. TERRITORIO DIGITALE the first t-learning example realized by a Public Administration in Italy.

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<sup>1</sup> [http://www.provincia.roma.it/UploadDocs/974\\_20060605palinsestoTerritorioDigitale22maggio\\_16giugno.pdf](http://www.provincia.roma.it/UploadDocs/974_20060605palinsestoTerritorioDigitale22maggio_16giugno.pdf)

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## EAGLE – EXPLORING LINKS BETWEEN INTERGENERATIONAL, DISTANCE AND E-LEARNING

*Thomas Fischer & Walter F. Kugemann, FIM-NewLearning, Germany*

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EAGLE<sup>1</sup> or 'European Approaches to Inter-Generational Lifelong Learning' (EAGLE) builds upon current developments in individual lives, in society at large and in learning across age groups and generations, especially in the light of substantial demographic changes, changing economic and welfare patterns, the shift from an industrial to a knowledge society, gradually dissolving traditional family structures, more and more individualised biographies and a general decline in civic participation. These changes have led to an individualisation of societal structures and to an increasingly age-segregated post-modern society implying a need for new approaches of re-qualification and re-generation within the concepts of social capital, social inclusion and e-Inclusion.

The concepts of intergenerational learning, social capital and inclusion are strongly interrelated as both make reference to i) actual and potential resources of social networks for the individual, ii) formally and informally shared norms and values between members of social networks, iii) reciprocity and trust within these networks and between the individual and the network. As a consequence inter-generational learning was and is a prime resource base for individuals, groups and the society at large. Individuals able to access and rely upon these resources and relationships increase their chances for personal and professional development; communities benefit from enlarged mutual exchange, active participation and cooperation; and societies become more cohesive and inclusive. On the other hand social capital is not equally available to all citizens as geographic, individual, social and intergenerational isolation might limit the access to resources. Furthermore social capital is not created equally, but mediated through psycho-social, socio-demographic and socio-economic variables.

The EAGLE approach to intergenerational learning incorporates lifelong (i.e. along the entire life span) and life-wide (i.e. formal, non-formal, but focusing on informal, autonomous and spontaneous learning) concepts, nowadays summarised as Lifelong Learning (LLL) and distance and e-Learning approaches. As literature shows intergenerational practices can help to overcome societal segregations; to promote greater understanding and respect between generations; to create mutually beneficiary learning experiences; to contribute to individual competence and capacity building; to build inclusive societies. The EAGLE desk and field research suggests that existing intergenerational policies, programmes, initiatives and projects aiming at re-uniting separated generations and sharing resources between them, can be categorised by the following aims and objectives:

- Learning from each other (e.g. skills and capacity development, digital literacy, employment, oral and local history, reminiscence, preserving cultural heritage);
- Helping and supporting each other (e.g. childcare support for single parents, mentoring and mediation for pupils and youngsters, support for migrants, interaction between day care centres for children and retirement homes, civic participation);
- Living together (e.g. multi-generational living, neighbourhood/community living);
- Experiencing together, opening up collaborative spaces (e.g. pedagogical initiatives in museums, community centres and work);
- Playing, acting and performing together (e.g. arts, theatre, music, festivals, workshops).

The paper will explore links between intergenerational, distance and e-Learning for different policy objectives (e.g. access to learning opportunities; social inclusion and e-Inclusion incl. digital literacy; employability; personal development and active citizenship; organisational change; innovation etc.) and for different learning territories (e.g. schools, universities, VET, at the workplace, within communities; Lifelong Learning etc.). In particular the paper wants to generate insight into the policies and practices and illustrate the potential, the synergies as well as the limitations of intergenerational learning.

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<sup>1</sup> This paper is based on contributions of the entire EAGLE partnership; more information about EAGLE at: [www.eagle-project.eu](http://www.eagle-project.eu)

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## PODCASTING & MOBILE LEARNING – CAN THEY AID SOCIAL INCLUSION FOR STUDENTS WITH DYSLEXIA?

*Hannah Barton, Philip Penny, Mark Riordan, IADT Dun Laoghaire, Ireland*

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The paper begins by giving some background information on dyslexia. It then looks at some of the popular Assistive Technologies (ATs) that are used to increase participation by learners with dyslexia in higher education. It then looks at Podcasting and its potential use as an additional AT that may aid social inclusion for such learners. The paper then describes a study on the use of Podcasts as an AT to help enable learners with dyslexia to participate fully in higher education. The initial findings of the study show that learners that are dyslexic may benefit from aural input of information using mobile learning technology over the traditional face to face method.

Within a short time of the emergence of podcasting, educators became aware that the ubiquity of MP3 players among learners and the ease of the download facility would facilitate educational applications. Approaches such as the use of summary podcasts can be used as cognitive scaffolds to provide support needed to accomplish learning by presenting the material in a manageable format. The use of podcasts can be seen as adapting to the learner needs as well as to the diverse learning style of learners with dyslexia. This study sets out to show the pedagogical benefits of using podcasts when compared to the traditional face to face method of lecture delivery for students that are dyslexic.

American psychologist Howard Gardner's theory of a multiplicity of intelligences posits that humans can have up to eight and possibly nine different types of intelligence, one of which is Musical intelligence. Dyslexic learners strong in Musical intelligence may benefit from aural input of information as their ability to listen and discern may be enhanced. Educators recognise that people are clever in different ways and Gardner's hope is that "more students can be reached more effectively if their favoured ways of knowing are taken into account in curriculum, instruction and assessment".

### Podcast Study

Preliminary results show that there was no significant difference between the dyslexic and non-dyslexic groups in the ability to recall information. This finding is encouraging because it shows that the group of learners with dyslexia, using mobile learning technology were able to complete the learning task in the allotted time. This also allowed them to complete the scored questionnaire that was designed to test recall of the learning content contained within the lesson.

### Conclusions

Podcasting has significant potential to connect learners to learning contexts at times and places entirely of the learner's choosing. It has little overhead expense in terms of setup or configuration and utilises a modality (hearing) which can be attended to in a large variety of settings and contexts. It contributes to a learner having greater control over their learning particularly for those who favour aural delivery. It is therefore likely to be of benefit to learners with dyslexia as it would allow the student control of the pace of delivery. Podcasting would empower the student to have control over their own learning thus enhancing self esteem. It also provides the content in a multi-sensory and manageable format thus making learning easier for the student with dyslexia. The widespread provision of podcast versions of class materials (lecture summaries) can therefore have an impact on the inclusion of learners with dyslexia in the educational process.

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# EMPOWERING GEOGRAPHICALLY ISOLATED COMMUNITIES WITH INSTANT ACCESS TO LEARNING AND TRAINING THROUGH SATELLITE

*Thanassis Tiropanis, Sofia Tsekeridou, Athens Information Technology, Greece  
Tacha Serif, Lampros Stergioulas, George Ghinea, Brunel University, United Kingdom*

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## Introduction

Enabling learning for members of geographically isolated communities such as agrarian or maritime communities presents benefits in terms of promoting regional development and cost savings for governments and companies. We present a methodology for designing a satellite and wireless based network infrastructure and learning services to support distance learning for such isolated communities. This methodology entails (a) the involvement of community members in the development of targeted learning services from an early stage and (b) a service-oriented approach to learning solution deployment. Here this methodology is applied in the context of the European research project<sup>1</sup> BASE<sup>2</sup> in which the following two types of geographically isolated communities are considered: agrarian and maritime.

## Methodology

The empowerment of community members to engage in distance learning is an issue that becomes more acute when the objective is to kick-start the involvement of isolated user communities in formal and informal learning activities. A solution to this problem can involve many iterative cycles between the learning solution providers (pedagogical and technological experts) and the communities for the definition of e-learning services, the identification of e-learning scenarios and eventually the finalisation of e-learning platform requirements. The methodology employed in BASE<sup>2</sup> involves the following phases:

- *Service Elicitation phase:* isolated user communities were involved in the process of eliciting services and service scenarios that can empower communication, collaboration and learning. Initial services were identified and potential learning scenarios were outlined.
- *Evaluation phase:* community members were invited to provide detailed feedback on the first compilation of services and service scenarios.
- *Scenario finalisation phase:* based on the outcome of the evaluation phase, it was possible to finalise the learning scenarios that combine identified services into learning experiences for the community members.
- *Service and Network Requirements:* the requirements for the performance of the terrestrial wireless and satellite network as well as the communication services for learning were compiled as part of this phase.
- *Deployment and Trial:* implementation of the software and network architecture and execution of trial sessions to examine the extent to which the service and network requirements are respected and to evaluate the community members' satisfaction with the implemented learning.

The current phase in the BASE<sup>2</sup> project involves the deployment of the service and network infrastructure and a number of trials. About 10 agrarian community sites in Greece and 2 in Cyprus have been identified and tasks for the network and service deployment are underway. In addition 1 vessel has been identified as a maritime community site that will communicate with a fixed site on land as part of the implementation of the scenarios identified above. The objective is to try all different scenarios for both communities. The initial feedback shows that (a) high-quality audio-visual material and (b) the opportunity for community members to interact with other community members either as groups (common-room oriented scenarios) or individuals (home-based scenarios) are expected to provide strong motivation for engaging the targeted users in both formal and informal learning activities.

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<sup>1</sup> Part of this work was carried out under the auspices of the Aeronautics and Space Programme of European Commission, as part of the BASE<sup>2</sup> project (Contract no.: 516159).

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## DEVELOPING INTERCOMPREHENSION COMPETENCES AS A EUROPEAN CITIZEN: THROUGH INFORMAL LEARNING OR/AND E-LEARNING COURSE? FROM A LINGUA PROJECT TO A PILOT COURSE IN AN INNOVATING E-LEARNING MASTER AT THE SORBONNE NOUVELLE PARIS 3

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European awareness & Intercomprehension, a Socrates Lingua 1 project, in 2003-2007, involves 34 members from 11 different countries in Europe: teachers specialists of linguistics, literature, didactics et cognitive psychology. As linguistic reductionism is increasing and English keeps dominant, EU & I promotes linguistic and cultural diversity for all European citizens, developing multilingualism in Europe and using an adequate methodology which encourages the development of reception competencies in life-long learning. EU & I studies the applications of the notion to comprehension phenomenons between families from different languages and consider non-verbal as essential.

Intercomprehension is "the process of developing the ability to co-construct meaning in the context of the encounter of different languages and to make pragmatic use of this in a concrete communicative situation" (cf. Capucho, 2004). Building practical tasks, we focus on verbal and non-verbal competences, using different modes and communicative strategies in everyday life.

EU & I process occurs inside the discursive competence as a pluricultural and plurilinguistic whole, driven by the dynamic components, i.e. strategic, affective and cognitive; a result of the actual interactive use of knowledge existing in the three dimensions: linguistic, textual and situational, implying both verbal and non verbal elements.

We want to train European citizens of all age and functions to understand the signification of written, oral, cultural datas in various communication situations of everyday life in unknown European languages, developing the awareness of the strategies we use to improve our reception competencies. We wish to contribute to increase language and culture awareness in Europe developing an efficient learning methodology for intercomprehension. We create learning tasks and materials built on an intercomprehension methodology and disseminate the notion and its applications in everyday life, making the public conscious of competences they already have.

In 2006 at the *Sorbonne nouvelle Paris 3*, the European project became a course, integrated into the master AIGEME, *Ingénierie de la formation à distance*, belonging to the numeric campus *Universities without Boundaries in Ile de France*, created with the support of the *Agence Universitaire de la Francophonie*, AURIF, *Association des Usagers des Réseaux d'Ile de France*, and EDEN. The course in French or English (as the other courses), conceived by Filomena Capucho (Catholic University Viseu, Portugal), I, responsible for the group stereotypes, and part of the team, is based on training French and Francophone students (from 9 countries this year) on the 10 modules of the DVD or website. The *ePortfolio* course is interesting to understand their reactions about the integration of such a module in African culture and test and study the transferability of the process...

Join us into the station, take your train, meet Europeans, listen to them, to stories they tell you, to songs they sing or listen to, read the weather, book your hotel, watch TV news... You will find out that you understand a lot from Austrians, Belgians, Bulgarians, French, Greek, Italians, Portuguese, Scottish, Spanish, Swedish and Turkish! It is time to check by yourself your strategies for intercomprehension. You may train yourself from now on [www.sprachenzentrum.com/eui](http://www.sprachenzentrum.com/eui).

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## E-LEARNING IN GERMAN HIGHER EDUCATION – 1.1 OR 2.0?

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### Two Paradigms of e-Learning in German Higher Education: 1.1 and 2.0

At present, e-learning in German higher education is on the cusp of a new paradigm: the “old” one – e-learning 1.1 that has followed mere computer-based and rudimentary web-based learning 1.0 since the mid-90s – is about to be modified, enriched or even displaced by the “new” one: e-learning 2.0. Both paradigms can be characterised briefly as follows:

#### E-Learning 1.1

- teacher/institution-defined, closed groups
- mostly formal learning
- teacher-generated “macro”-content
- limited content sharing within closed groups and domains
- standardised tagging of content by provider/teacher
- clear distinction between the learning process and everyday life
- clear-cut distinction between teachers’ and students’ role models
- quality assessment by teacher
- technical platforms: learning management systems, content repositories, authoring tools

#### E-Learning 2.0

- self-organised, open communities
- self-paced and mostly informal learning
- creation and syndication of microcontent by students
- unlimited content sharing across domains
- individual tagging of content by user/student
- blurred boundaries between e-learning and everyday life
- disbanding distinction between teachers’ and students’ role models (or new emerging role models)
- quality assessment by peers
- technical platforms: wikis, blogs, podcasts, portals with RSS feeds, social software in general

To what extent e-learning 2.0 has already conquered academia in Germany is difficult to say. As a survey carried out among German universities in summer 2006 shows, e-learning as such is constantly gaining ground in German higher education. 87% of German universities provide web-based learning material, 66% have set up interactive learning environments, 36% virtual seminars or tutorials, 31% live-streams of lectures, 21% virtual laboratories and practical courses, and 16% offer online study programmes.<sup>1</sup> But the share of e-learning 2.0 in these teaching scenarios remains unknown – even if we can find a growing number of projects and staff using social software and hot technologies at German universities.

### E-Learning 2.0 as a New Model of Learning in Higher Education – Fact or Fiction?

The second part of this paper addresses the question how e-learning 2.0 is going to affect the traditional ways of teaching and learning in German higher education. Highlighting some current trends of e-learning 2.0 and discussing some ideas of Michael Kerres on the educational use of web 2.0-technologies I shall dwell on some incompatibilities between higher education and the new paradigm of e-learning. My claim is that e-learning 2.0 will not be able to revolutionise higher education and will not succeed in academia unless it is “tamed” according to some core features of the higher education system, e.g. exclusiveness of participation, reliability of knowledge, and standardisation of rules and processes. Hence, higher education will not allow for an unlimited openness that is characteristic for web 2.0.

On the other hand, universities will undoubtedly benefit from these new methods of gathering, spreading, sharing, and discussing information as long as the new ways of teaching and learning do not come into conflict with some of the most fundamental institutional prerequisites of higher education.

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<sup>1</sup> However, one has to take into account that – except for learning material on the internet or intranet – the share of e-learning in all teaching activities of a university mostly averages up to only 10 percent.

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## FROM THE EDUCATIONAL POLICY TO THE RESEARCH ACTION IN THE BLENDED LEARNING PROJECTS: TEACHERS AS PROGRESSIVE PRACTITIONERS

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The present contribution aims to make explicit and outline a series of theoretical, conceptual and operative assumptions which have led the practices related to research and development projects within a team (ICT team) dealing with the reflection about the potentialities and specificities of the technology introduction into the Swiss vocational educational system. This team has a particular institutional role in the R&D department of the SFIVET, Swiss Federal Institute for the Vocational Educational Training which receives from the Confederation the task for what concerns the trainers' training and updating and for developing and leading research projects referring to the same field.

Our recent experiences and publications reflected and deepened a national implementation project related to the ICTs use in traditional didactics, developed in the period 2001-2004, on which basis the involved teachers' practices had been examined in order to sketch a competence profile of the teachers integrating ICTs in their own didactics.

Taking stock of this experience and of other running projects, furthermore being an institution concerned with the teachers' training and with the evolution of the professional profiles in general, it is important to explicit some back staying assumptions which base these researches related to the teacher's professionalism for what the ICT sector concerns. In particular here we would like to clear the following:

- Why does the necessity to investigate teachers' professionalism in the vocational training system rise up?
- Which contextual elements concern directly the actual teachers' role?
- Which of these elements in particular concern a teacher using ICTs in his own didactics?
- Why or on what conditions the distance or blended learning settings are/become the privileged opportunities for reflecting on the teacher's role?
- How to investigate the professional profile of a teacher?
- Why do we use the competence concept for analysing teachers' practices?
- Why are we building an entire competence profile on the basis of the obtained competences?

In order to answer the first series of questions, it is necessary to say that on the basis of the research work conducted about the teacher's profile within blended learning projects, there are three kinds of reason: the first concerning the significance of the reflections about the teacher's role in the changed socio-professional context; it seems to us that the teacher is one of the most concerned profession influenced by the contextual changes, due to the undoubted spin-offs that the present changes have on the training objectives themselves; the second concerning the specifics of the technologies in the changes of the working and didactical-pedagogical practices; moreover a reflection about the changes investing the teachers' professionalism meets the requirements of building training paths for the teachers themselves, as much as possible based on the examined practices in experimental projects, which therefore reveal possible ambits of development for professionalism.

It will be clarified how this study was set up and structured, primarily from a theoretical and conceptual point of view and then from a methodological one, answering questions like "What is necessary to survey for obtaining a snapshot of the teachers' professionalism?" The research process foresees to investigate the practices (monitoring), using the concept of competence as paradigm for the working practices, in order to obtain a competence profile.

The theoretical-conceptual approach here explicated should be useful to: identify training areas in the ICT-field for the teachers; take into account the present complexity of the teachers' role, and the changes related to his professional identity, considered that the working practices are one of the most objective areas of the personal identity; Verify the relevance (and the operative utility) of the concept of competence and in particular the predominance of the social and personal resources, required by the present professional context.

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## MONITORING INNOVATIVE SCHOOL PROJECTS: AN ANSWER TO THE NEED OF DEVELOPING COMPETENCES

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In this contribution we present OpenCampus, the *blended learning* project which is being implemented at the SSIG in Bellinzona (State School of Applied Computer Sciences and Economics, <http://www.ssig.ch>) – a Business Information Technology post-diploma school – considering it in a wider framework letting us underline its didactical, organizational, training of trainers and training policy implications related. The actors directly involved in the project are mainly 14 teachers engaged with the *blended* training offer (but all the 23 teachers are asked to reach the minimum objectives concerning the use of the online learning environment) and 10-11 classrooms, with more or less 160 total students (actually 94 are already involved), over three school years (05/06: 4 classrooms; s-y 06/07: 7 c.; s-y 07/08: 10-11 c.).

As shown elsewhere (Cattaneo & Boldrini, 2007), the current training and in particular the vocational training reference frame allow us to consider the teaching changing role, and the consequences of this change on the other actors and components of the system. On account of this, it is more and more usual to think to school institutions as to subjects promoting “projects” and interventions really not conceivable as simply delivery of on-site lectures. The SFIVET often becomes partner in the conception, formulation, and above all psycho-pedagogical and didactical accompanying of these school innovation projects. Forms and devices of such an intervention are presented and discussed here.

Just focussing on this accompanying activity, it should be said that it can be roughly conceived by four main modalities, to be interpreted also – but not only – as a progressive sequence: 1. accompanying of preliminary phases (connected to training courses, answering to specific requests, to solve contingent “problems”, or even to investigate and prepare the field to develop a real structured project), 2. advice/consulting (for little experimental or pilot activities, for the first phase of a project, for the elaboration and drawing up of the project itself), 3. monitoring (in the implementation phase and just in the development phase of the project), 4. evaluation (this last point can be considered the final act of monitoring).

OpenCampus aims to introduce – for some subjects in the two different curricula offered by this school (a full-time *curriculum* and a so called “*en emploi*” one, mainly addressed to already employed people) – a modality of teaching/learning centred on the *blended learning* model – using and exploiting an open source online learning environment (OLE) developed and customized inside the school.

Implementing a project like this let us glimpse at least three orders of spin-offs: a.) for teachers, for whom the project is a basic opportunity for one’s own lifelong learning and pedagogical and didactical updating on the use of ICTs in training contexts; b.) for the school-seat, which submits itself as a *best practice* example on the theme of didactics and new technologies, and is confronted with a structural organizational change; c.) for students, to whom more flexibility is allowed in comparison to the physical presence required for classroom lectures, but for whom the project also constitutes an interesting educational and formative challenge as regards responsibility, work organization, management of place and time of learning.

The paper presents in particular the monitoring design: tools and forms of the data collection and analysis. In fact, these activities intend to consider the effects provoked by the project on: 1. the teachers’ training and the increase of their professional knowledge; 2. the students’ school and learning results; 3. the definition of a blended programme of studies; 4. the organizational proportion and implications for the school institution. Through the different analysis we are going to evaluate the efficacy, efficiency and effects of the project on all the four points, in order to obtain results on three different sides: 1. the content side, aiming to deepen the relationship between learning and teaching; 2. the methodology side, with the definition of a monitoring device; to this level is also naturally tied the theoretical investigation side and of modelling research interventions in the educational field of VET; 3. the method side, where method has to be conceived as subdued to methodology, and more in detail for what concerns the different techniques that make the whole device possible; for instance, the possibility to increase the interactive and complementary use of different software of text analysis (both qualitative and quantitative), rather than the introduction of new techniques of data processing (for us, that is the case of the social network analysis); the basic issue concerns here the positive, proficient and pertinent interaction of the single elements in a whole research design (for example the cross-reading of the results emerging from the analysis of the interviews and of the logfiles).

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## QUALITY ASSURANCE FOR MEGA-UNIVERSITIES A CASE STUDY OF THE CRTVUs

*Ge Daokai, China Central Radio & TV University, China*

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The China Radio & TV Universities (hereafter CRTVUs) are classified as one of the mega-universities, which is also regarded as the biggest distance education system in the world with more than 2.17 million tertiary-level enrolments and nearly 5.6 million graduates. The mission of the CRTVUs is to provide opportunities to all those who have the aspiration for higher education and those who are unable to take advantages from the traditional modes to obtain improved qualifications. Through more than 28-year endeavours, CRTVUs have contributed a great deal to changing the imbalanced educational distributions, creating equal higher education opportunities and demonstrating successful higher education reforms. CRTVUs are becoming the mainstay of modern distance education in China.

To achieve its lofty goal of playing important role in constructing mass education and life-long learning system, CRTVUs have not only put their efforts into enlarging the scale, but also laying particular stress on quality assurance. We are convinced that quality is the lifeline for any forms of higher education and so it is with distance and open learning. This paper has examined the experiences of CRTVUs for the past years to demonstrate our practice and innovative steps.

Our experiences mainly indicate that

- the objective must be clarified: to meet the social needs;
- resources must be sufficient: to allow our students to have multiple choices;
- support must be efficient: to keep student-center in mind;
- the technology must be updated: to guarantee interaction to happen when it is needed;
- our staff must be qualified – to provide relevant guidance and facilitating the students;
- the management must be effective – to offer standard criteria and assessment.

The achievements of CRTVUs can be observed through their infrastructure, their increased comprehensive capacity in running school and their real value as a true innovative university.

The author has addressed four aspects at the end of the paper to indicate the challenging trend facing to CRTVUs: enlarging the openness, ensuring the quality, enriching the features, and establishing the brand. The author further offered his vision for CRTVUs' sustainable commitments to: assembling quality learning resources; providing considerate learning support; conducting lively scientific research; and constructing a life-long learning platform for the general public in order to serve for education of professionals, to establish a harmonious society and creating a new learning environment for open and distance education.

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# PRACTICE IN TRAINING TALENTS OF COMPUTER SCIENCE THROUGH OPEN EDUCATION OF CCRTVU

*Cui Lin, Yuan Wei, China Central Radio & TV University, China*

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## Overview

Since 1999, China Central Radio & TV University (CRTVU) trained undergraduates majored in computer science and technology through open education. This project is designed to train computer application-oriented talents orienting at the demand from grassroots level of the country. By the end of 2006, the project has gotten great success, with a total enrolment of 61,831 students, 17,922 of whom have graduated and 1,266 got bachelor's degree.

## Teaching Organization and Implementation

Firstly, taking into account the social demand and the situations of students, the teaching plan provides more flexibility for different regions and students. Secondly, in order to guarantee teaching quality and standardize teaching content, CRTVU at the central and provincial levels have played a major role in the construction of teaching resources. Thirdly, different levels of teaching units in CRTVU have done a good job by relying on the online teaching and learning platform, combining face-to-face tutoring and carefully implementing teaching process. The students can study on the Internet through the platform and the teachers can conduct interaction with students by live communication, course forum and e-mail to solve the learning problems in time. We have also given a professional website for introduction and information release.

As a multi-layer teaching system, CRTVU is responsible for working out teaching plan and issuing unified textbooks and conducting unified assessment. Provincial level universities are responsible for executing unified teaching of compulsory courses, selecting selective courses, determining teaching requirements and organizing standard implementation. Teaching points at and below city level organize and execute teaching and assessment according to the course teaching standard and requirement formulated by CRTVU.

## Introduction to the Course: The Principles of Computer Organization

Since the course is highly practice-oriented, some ways have been taken. A lot of course resources have been developed. The students can make design and operation on the model experiment device. The virtual experiment in teaching courseware and Internet courses can serve as preparation for real experiment, improving the actual effect of training on the students' practice ability. The courseware for-teachers can enhance the overall teaching quality of face-to-face teaching.

## Future Efforts

Computer technology is accompanied with features of fast development and high practicability. Therefore we need to adjust the teaching plan and revise teaching content on a regular basis. In addition, we should improve teaching platforms and draw up specialized rules, in order to grant students more latitude for course selection, personalized study and development. Finally, we should make effective use of information and communication technology to improve teaching quality monitoring, finding problems in time and making improvement.

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## DEVELOPMENT AND APPLICATION OF WEB-BASED LEARNING NETWORK SYSTEM IN CRTVU

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It is clear that distance education is becoming more popular all over the world along with the development of ICTs (Information and Communications Technologies) taking computers and the Internet as the core technologies. Distance education takes place when a teacher and student(s) are separated by physical distance, and technology, often in concert with face-to-face communication, is used to bridge the instructional gap. This paper shows some results from survey to CRTVU's students about basic situation of online learning and attitudes to online learning. It indicates that the condition of online learning is improving for CRTVU students. In the wake of developments in Internet and ICTs, online learning materials and online tutorials and interaction are playing more and more important role in distance learning.

The paper introduces the digital learning platform system used in CRTVU, which combines network of satellite and Internet for learning resources and data transmission to achieve a three-level learning platform interaction. The application of video conferencing, which is based on digital learning platform system to meet students' demand for distance face-to-face tutorials, is mentioned in the paper as well. Learners are in the process of studying by interacting with the external environment thus distance learners could benefit from on-line learning using interactive methods. There are several ways of interaction including synchronism and asynchronism teaching activities by using communication format of text, video, audio for online learning in CRTVU.

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## OPEN LEARNING CONCEPT AND ITS PRACTICE TECHNOLOGY SUPPORTED LEARNING FOR STUDENTS OF CRTVUs

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Open learning concept is the guided line for the China Radio & TV Universities (Hereafter CRTVUs). With the view of realizing the idea of educational democracy and equality, CRTVUs have never turned their eyes away from the need of the diversified groups of learners, especially the most easily neglected areas and people. Open Education Pilot Project, Scheme of One Student in One Village, the Education College for the Disabled, the Bilingual Language Programs in minority regions, Course Delivery for Military Officers and Soldiers, and many other continuing educational projects are actually very practical steps to increase access, enable affordability and enhance national competence. All of the above projects are technology-based and have obtained very positive social impact.

In light of China's concrete situation, there is limited campus-based infrastructure and non-affluent academic staff members deal with the increasing number of participants in higher education and continuing education. Therefore, distance education mode is regarded as a good solution to increase opportunities and as an effective measure to turn population pressure to human resources. Controversy surrounding the question "Who are our real students?" is always aroused and the strategy for serving learners from grass-root units, from remote and rural areas and from regions with minority groups is reaffirmed by our actions. Keeping in mind the principle of sending best quality education resources to the most needed people, CRTVUs have made strenuous efforts in building web-based learning environment and encourage more interactive teaching and learning to take place. To implement the successful programs, we have not only attached great importance to the most relevant learning resources, but also embedded open learning concept in our teaching and learning reforms. The digital interactive learning platform, the new teaching methodology, and the effective academic management have enabled the projects to be in good progress. Survey and feedback from both students and employers are very positive, which demonstrates the potential for CRTVUs' further development in the field of distance learning. Looking at the achievements we have made in evoking awareness of the ordinary citizens, improving their capacities for existence and development, increasing their courage for a more competitive world, we may say that we are practicing the open learning concept which we have long cherished and making contributions to the world distance and open learning undertakings.

Addressing challenges, the authors of this paper give hints for further improvements of distance learning programs within the system. The authors proposed that several aspects must be notified to enable CRTVUs to be in the forefront of the international arena of distance and open learning, which contain (1) developing more effective technology-based learning strategy for more diversified groups; (2) putting consideration of cost efficiency into designing and delivering processes; (3) laying focus on staff development and teacher training programs; and (4) inducing research findings into practical innovations to promote sustainable development of CRTVUs.

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## U.S. ONLINE LEARNING IN THE MAINSTREAM: PERSPECTIVES FROM THE SLOAN CONSORTIUM

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Over the past fifteen years, many of the most significant innovations in the use of online learning to increase access to higher education in the United States of America have been stimulated by grants provided to colleges and universities by the Alfred P. Sloan Foundation. The Sloan Foundation's commitment to online learning led to the creation of a new professional community, the Sloan Consortium, and to ongoing research into the impact of online learning on American higher education. This session will review the movement of online learning into the mainstream of U.S. institutions and several trends and initiatives.

For the past four years, the Sloan Consortium has surveyed chief academic officers at U.S. institutions to measure the impact of online learning in our institutions. These studies have documented the growth of enrolments in online learning, both at a distance and on traditional campuses. In 2005, more than 3 million students took at least one online course. At the same time, the survey has revealed a steady movement of online learning into the mainstream of higher education. The majority of chief academic officers now see online learning as strategically important to the future of their institutions. Online learning has increased access to higher education among adult learners, but it has also allowed institutions to improve the quality and effectiveness of on-campus instruction, helped institutions better respond to changing community needs, and has opened new opportunities for inter-institutional collaboration.

The Sloan Consortium is also tracking the blending of online and classroom instruction that is designed to help institutions be more responsive to local institutional and community needs, and the potential role of online learning to ensure academic continuity in the event of pandemic illness or other emergencies.

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## CANADIAN PERSPECTIVES ON RECOGNIZING PRIOR LEARNING: BARRIERS TO IMPLEMENTATION OF PRIOR LEARNING ASSESSMENT AND RECOGNITION (PLAR) IN THE UNIVERSITY SETTING

*Angelina Wong, University of Saskatchewan, Christine Wihak, University of Calgary, Canada*

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The recognition of prior learning (RPL) in the education sector has been practiced in Europe, North America, Australia and New Zealand for over two decades. In Canada, community colleges and some regulatory bodies have been the primary adopters of RPL. Universities have generally been resistant to the practice while endorsing the philosophy of RPL within the framework of lifelong learning. RPL is also commonly referred to as PLAR (prior learning assessment and recognition) among Canadian universities. RPL or PLAR can be defined as the process of identifying, assessing, and recognizing skills, knowledge, or competencies that have been acquired through work experience, unrecognized training, independent study, or volunteer activities. Economic and social changes have spurred many adults to seek higher education credentials for both career advancement and personal growth. RPL can potentially ease the entry or return of adult learners into formal academic learning by providing them with opportunities to verify what they have learned against the standards required by specific university courses and programs (Wong, 1999; Thomas, 2000; Wihak, 2005). In spite of widespread interest prospective adult learners, a survey sponsored by the Council of Canadian Ministers of Education shows that universities conduct few RPL assessments.

While barriers such as the time and cost involved in preparing an application may exist (Wong, 2001), recent research indicates that prospective adult learners may not be aware of the availability of RPL at universities (Shmyr, 2005). A recent study of the availability of PLAR (RPL) information on the websites of 60 Canadian universities (Wihak, 2007) confirmed that considerable variation exists in the ease with which RPL information could be located and in the quality of information provided. A third contributing factor to the gap between expressed interest among adults and the actual number of RPL cases processed may be linked to persisting reluctance among university faculty to adopt the practice (Wong, 1999, 2000). RPL requires faculty to consider how to accommodate alternative routes through prescribed content and to develop clearly stated learning outcomes at different levels of achievement, a process that in essence involves a realignment of existing curricula and adoption of alternative assessment practices.

This paper is intended to (1) summarize the research methodology and findings of a study on the availability of RPL information on the websites of Canadian universities (Wihak, 2007); (2) share insights from a research study of factors contributing to faculty resistance to or support of RPL; and (3) propose a strategy for enhancing faculty support for RPL.

Trends and forces are at work that might influence Canadian universities to become more active in PLAR. With the increasing worldwide emphasis on lifelong learning, the demographic of the university student body in Canada is changing. Adult students (over the age of 25) now represent over half of Canadian university enrollments (Association of Universities and Colleges of Canada, 2003). With the growth of e-learning, these students can shop for programs in an increasingly competitive global market. Making a commitment to offering PLAR credits may give an institution an advantage in attracting adult learners. In addition, the growth in interest in the Scholarship of Teaching and Learning is encouraging faculty members to become more skilled and creative in planning their teaching and developing their assessment practices (Huber & Morreale, 2002), as well as in documenting their own development as teachers in portfolio form. Some faculty members are further motivated to explore alternative assessment strategies by their institutions' increasing support of outreach and engagement activities – including programs such as community service learning and co-operative education. As university faculties become more familiar with alternative assessment modes and adopt inquiry-based teaching practices, the landscape of PLAR will also become more familiar.

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# BLENDING LEARNING, COLLABORATION AND CULTURAL DIVERSITY: SOUTH AFRICAN PERSPECTIVES

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## Background

In their research the authors made use of an action inquiry, stretching over three cycles, to investigate ways in which the face-to-face mode can be effectively combined with new technologies (i.e. a blended learning approach). The module which was selected for the inquiry is a one-semester Information Technology (IT) module on second-year level. The context/setting is the University of the Free State (UFS) in South Africa where blended learning is regarded as a relatively new practice with possibilities for addressing many of the teaching and learning problems at the institution, such as the diverse student population from different socio-economic backgrounds; large classes; inadequate preparedness of students for higher education; the continuation of some of the inequalities of the past; and some students' lack of technological skills. In addition, the policy of parallel-medium instruction demands creative ways of dealing with the challenges presented by such a policy.

## Research method

During the planning phase of the third cycle of the inquiry the researchers decided to subject some of the multitude of findings gathered over a period of three years to scrutiny by fellow online/e-/blended learning facilitators / designers / researchers at other higher education institutions in the country. For purposes of an inter-institutional survey a structured web-based questionnaire was developed. This discussion focuses on one of the aspects which was investigated, namely the handling of diversity in the South African/UFS context. The researchers hoped to gain insights into how the issue of cultural diversity is dealt with in collaborative activities at other South African higher education institutions and whether (and how) blended learning could help to address the issue. A total of 26 respondents representing nine institutions reacted to the invitation for participation sent to selected higher education practitioners in the relevant fields. The analysed data revealed a range of views and brought insights which are discussed under group composition and allocation; the blended approach; and language issues.

## Perspectives gained

The perspectives gained in the inter-institutional survey, linked to the insights emanating from the action inquiry, led to the identification of a number of guidelines for the handling of cultural diversity in a blended learning environment. These guidelines, with emphasis on collaborative activities, include the following:

- Involve students in the group allocation process.
- Provide groups with opportunities to communicate both online and face-to-face.
- Provide opportunities for interaction among culturally diverse students.
- Provide opportunities for inter-group activities (especially when dealing with homogeneous groups).
- Make online material available in all the institution's official languages.
- Address lack of prior e-knowledge by providing students with opportunities to practise the use of the various e-learning tools.
- Let students practise the use of e-tools in a safe, non-assessed and less formal space.
- Be aware of possible differences (e.g. in learning style, attitudes, behaviour, support links) towards collaborative learning among advanced and less advanced students.

## Conclusion

The researchers have come to the conclusion that the building of online communities has the potential to encourage participants to become engaged in experiences where social relationships can be established and boundaries reduced; as such it can serve as a means of social transformation. The significance of the survey undoubtedly lies with the exposition and acknowledgement of the underlying complexity of the specific teaching and learning environment on the one hand and the exciting prospects the blended mode offers, on the other.

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## E-LEARNING QUALITY ASSURANCE STANDARDS FOR PRIMARY AND SECONDARY EDUCATION IN KOREA

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E-Learning (herein learning using internet, by means of internet) is currently emerging as the new education paradigm for a knowledge-based society. As such, many countries worldwide are pro-actively introducing and utilizing e-Learning. However, until now the expansion of e-Learning in Korea has not had a scientific basis or been guided by measures and processes for the development and innovation of education. In this sense, it is difficult to fully verify quality of e-Learning.

Therefore, MOE&HRD (Ministry of Education and Human Resources Development) recognized the necessity of the development of standards and guidelines for e-Learning quality assurance at the national level. A national quality assurance system will surely contribute to ensuring a high level of quality and securing professional e-Learning quality assurance consultants. As such this study aims to develop Quality Assurance (herein after QA) standards at national level in order to guarantee learners' rights and promote the quality and advancement of e-Learning.

### Research Method

Before building general standards for e-Learning QA in Korea's primary and secondary schools, we need to comprehensively look into our own evaluation criterion and guidelines as well as those of other countries( like the UK, the US, France, Singapore, and Australia/New Zealand (TLF: The Le@rning Federation)). If there is common ground among those countries about fundamental aspects of QA, they could also be included in Korea's QA standards.

### Analysis

Based on the Survey on e-Learning experts and overseas guideline analysis, 18 key areas to be included in the evaluation criterion are identified. The evaluation basis of e-Learning content, management & service area are categorized based on evaluation area, evaluation criterion, evaluation element, evaluation indicator, and evaluation item.

The documents developed as the final evaluation items are divided based on category (include Mandatory and Optional) and importance (graded A, B or C) to suggest value standards for service providers and institutes to consider when characterize e-Learning content dependent upon their needs and requests.

### Conclusion

First, e-Learning evaluators (MOE&HRD, 16 MPOE (Metropolitan and Provincial Offices of Education), KERIS, etc.) can utilize these standards as a benchmark or tool in a range of assessment activities on e-Learning provided in primary and secondary schools.

Second, e-Learning QA standards provide evaluation area, criterion, element, indicator and item for those working for e-Learning services to conduct correct QA. Therefore, e-Learning providers can select evaluation elements that are best suited to their own development and operation environment, and carry out their own QA activities. Detailed evaluation guidelines for QA evaluation standards can be utilized in a voluntary qualification process in education institutions.

Third, by upgrading the quality of e-Learning, these QA standards are expected to indirectly contribute to guaranteeing the rights of learners, vitalizing e-Learning and promoting quality. The users can utilize these standards as objective assessment tools that can provide a foundation for the self-assessment of e-Learning.

Fourth, these standards are developed for e-Learning QA in primary and secondary education, and are expected to help upgrade our e-Learning to meet the standards in the international community where systematic QA is required. In addition, these standards are likely to be applied as world class QA standards in the future.

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# ORGANISING VIRTUAL EUROPEAN SEMINARS: EXPERIENCE AND BEST PRACTICE FROM THE VENUS SEMINARS ON GLOBAL ISSUES FOR THE EUROPEAN CITIZEN

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## The Venus project

The VENUS Consortium internationalises prestigious courses, with international scope and importance, in each member university through virtual mobility, open to both students and citizens. The content focuses on promoting European citizenship, collaboration and personal development. VENUS aims to implement two different models of international virtual seminars (a seminar series during the academic year and a one-week summer school) and evaluate their sustainability. VENUS aims to enhance international clusters of educational institutions each strongly embedded in regional networks, in order to stimulate inclusion of citizens. Through the elaboration of the contents on two levels (general European and region specific) the European identity is enhanced and at the same time local aspects are valued. VENUS aims to become a best practice example of cross-border collaboration between higher education organisations, businesses and citizens. The overall objective is to create and document a sustainable example of the 'Faculty of Extension', extended both in the sense of methods and target groups with a special focus on life-long learning strategies.

## Results

The main outcomes of VENUS are sustainable models for creating a "Faculty of Extension" resulting from the well-balanced integration of European relevant content provided by experts and academics that are otherwise not reachable by the European Citizen, inclusion of foreign students, citizens and lecturers (physically or virtually), international and regional networks and the appropriate supportive forms of transmission and collaborative methods (videoconferences, web-streaming, online chat ...).

A virtual "Faculty of Extension" has been created in each university, jointly developed training materials (including a Virtual Seminar Organisation Handbook), a documented strategy for Higher Education Institutions and their partners in education on how to successfully organise self-sustainable, high quality and certified virtual mobility schemes, an online module entitled "Europe in Focus" that contains recordings and learning materials that are derived from the seminar series, the set-up of a sustainable virtual mobility scheme accepted in the mainstream educational offer of the partners and outside the partnership.

## Presentation

The purpose of this presentation is to provide information on how to organise and implement a Virtual Seminar Series within the frame of a Faculty of Extension. Within the Venus Project we tested and investigated strategies on how to extend a Seminar Series to a virtual, international and life-long learning level. We will discuss both the theoretical models used as well lessons-learned derived from our hands-on practical experiences gathered through organising 9 successful blended Seminars.

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# TENCOMPETENCE TRAINING APPROACH

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## TENCompetence Project

Knowledge society demands continuous competence development and management at the individual-, group- and organizational level. These levels represent distinct fields with their own approaches and tooling, but integrated support for informal and formal learning is missing. TENCompetence is a 4-year EU-funded IST-TEL project (<http://www.tencompetence.org>) that has the aim to build a technical and organizational infrastructure for lifelong competence development. The TENCompetence infrastructure will be based on Open Source Software (OSS) and Open Standards. OSS services can be replaced by commercial ones and this infrastructure should be self-sustainable after the project period. A network of core and associate partners will provide commercial and non-commercial services using this infrastructure.

This paper presents a training approach for the TENCompetence future users, (prospective) associate partners and the consortium members. The TENCompetence infrastructure will support both the emergence and sustainability of learning networks as well as a more design-driven approach to competence development, and this will be reflected in the training activities. Our aim is to train not only people closely related to the project, but the focus will shift towards

- providing training to organizations and service providers who will run independent real-life demonstrator pilots, including all the technical tasks involved, and
- training for associate partners to become service providers to sustain, through the future TENCompetence Foundation, the TENCompetence infrastructure.

## TENCompetence Training

In addition to the 'demand-driven' approach in identifying training needs, TENCompetence principles and tools will be applied to assess competence and define competence gaps within the Consortium and the future Associate Partners through the following procedure:

- List all TENCompetence WP tasks,
- Define competence profiles required in the consortium: TENCompetence Competence Map,
- Staff uses the competence map to do a self-assessment,
- Create and populate the Tasks x Competences Matrix,
- Analyse the outcomes (gap analysis),
- Prioritise competence development needs,
- Identify expert facilitators within the Consortium,
- Establish Competence Networks for these topics.

Computer supported services will become available for competence definition, positioning, navigation, and recommending. Together these integrated services will constitute the Personal Competence Manager (PCM). This PCM will also work with the TENCompetence Competence Map. At a later stage, the same procedure may be used by Associate Partners to self-assess their competence profiles for participation in TENCompetence, and participation in competence development activities (be it as learner or as provider).

## Conclusion

This paper describes the TENCompetence training approach that is based on competence mapping and gap analysis. On the basis of the prioritised competence development needs, experts will be identified (according to the self assessment) within the consortium to serve as facilitators in setting up Competence Networks. The first version of the TENCompetence infrastructure will be used to implement these Networks.

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# NETWORKING FOR DEVELOPMENT: A CASE STUDY OF COLLABORATION AND ACHIEVEMENTS THROUGH EU PROGRAMMES IN PROMOTING ICT SUPPORTED LEARNING ENVIRONMENTS

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The background context for this paper is the MSc e-Learning Multimedia and Consultancy that was developed from the Advanced Curriculum Development Masters in Multimedia Education and Consultancy Project (MMM) supported by the European Commission under the Socrates-Erasmus programme (1998-2001). The MSc programme arose from collaboration within the Thematic Network for Teacher Education in Europe (TNTEE) that was co-ordinated by Umeå University (1996-99) and in particular from collaboration between the University of Oulu, Hogeschool van Arnhem en Nijmegen (HAN University) in the Netherlands and Sheffield Hallam University in the UK. Subsequently it has been the basis of an active and ongoing partnership between HAN University and Sheffield Hallam University and of a more recent increasing involvement by participants at the Umeå University.

Central to the values and vision of the MSc programme team has been a belief in the importance of knowledge sharing and collaborative knowledge building in learning communities e.g. between individuals, across subject and professional boundaries, both within and between learning organisations. A strong emphasis has been placed on collaborative action research and reflective practice both by participating students and also within the tutor team from the outset of development. In designing and planning the programme considerable emphasis has been placed on a collaborative project work-based approach towards learning has underpinned the programme.

An action research approach has guided development during this process. Subsequently this approach has become conceptualised within an integrative model of design research that aims to integrate the processes of research, evaluation and dissemination. Such an approach draws upon thinking and development around the Integrative Learning Design (ILD) framework, the central goal of which is to both construct propositions about teaching and learning and also to engineer and construct effective learning environments that enable both teachers and learners to make these propositions actionable. The phases of design research are seen to be consistent with, but to extend the reach of, action research involving phases of informed exploration, enactment, evaluation for local impact and evaluation for broader impact.

In recent research, we have identified the importance of social dimensions for successful learning communities to form and of the need to design for "social infrastructure" from the outset of the design process. We have highlighted also the need to develop such social infrastructure for effective professional development to occur. Such social infrastructure is seen to be achieved through the development of the interpersonal bonds that build up gradually among network members and which, just as significantly, can be seen to outlive the network group itself and in this process create a stronger and more lasting network that can be built upon in the future. Accordingly the very processes of curriculum development, team teaching and collaborative research provide the opportunities for the professional development of the tutors involved also. As such networking is not only seen to be an activity for innovation but is also enacted and experienced as a process of innovation. In our experience it is through the focus on development with attention to the whole learning design process that successful networking has been achieved.

A particularly significant achievement of the Socrates-Erasmus MMM project has been the way in which it has led to a programme of development that has been sustained over a 10 year period. In turn this project built upon the achievements of earlier EU programmes and projects e.g. TNTEE and T3: Telematics for Teacher Training. Current planning is taking place to extend this partnership further in the future. Such a development creates new challenges especially in relation to the creation of shared learning environments and of opportunities for team teaching and collaborative learning. The rapid development of the World Wide Web in recent years has transformed the ways in which we can think about teaching and learning, opening up new possibilities for the development of learning communities independent of time and of particular institutional contexts e.g. commercial managed or virtual learning environments. The potential of social software for social networking through the opportunities afforded by Web 2.0 is seen to be of especial interest and to offer significant potential for future development.

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# SCALING UP AND SCALING OUT: HOW THE eLENE PARTNERS ARE ADDRESSING SUSTAINABILITY IN EUROPEAN E-LEARNING PROJECTS

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## Introduction

The two-year eLearning project eLene-TT (eLearning network for Teacher Training) has resulted in the development of the TT Centre, a one-stop resource centre containing over a hundred tools, guidelines and sample curricula for teacher training in the innovative use of ICT for higher education. This report details the project's successes and challenges, and shows how the partnership is now working towards a new goal: transforming the TT Centre into a genuine service centre for teaching and learning, scaling up and scaling out to reach a wider public and addressing sustainability issues vital to the success of European project initiatives.

## The first project: eLene-TT (2005-2006)

The driving idea behind the eLene-TT project was to improve the ability of HE teachers to make innovative pedagogical use of ICT, through the development of an online resource centre. The project provides guidelines and resources for both teacher trainers and teachers themselves and developed a transnational programme of student-driven teacher training actions, pooling and testing tools provided by each of the partners. One issue shared with the majority of EU funded projects is that of sustainability. One of the strategies implemented by the eLene group was to draw up an exploitation agreement, whereby partners committed to a reasonable input for a period of five years after the project lifetime in order to ensure the hosting and editorial administration of the TT Centre.

This would have ensured a limited level of sustainability, but the emerging needs identified during the course of eLene-TT, the conviction that the TT Centre had great potential and the desire to continue working together prompted the group to submit a proposal in the 2006 eLearning call. Convinced also that one route to sustainability lies in mainstreaming innovative practices, the new project fully integrates this strategy by involving institutional decision makers.

## Scaling up and scaling out: eLene-TLC (2007-2008)

Our main objective with eLene-TLC is to prepare universities for the net generation of students, refining the eLene-TT approach by analysing and integrating ICT in education competency frameworks and by extending the target audience to more teachers and teacher trainers, as well as bringing in instructional designers, educational technologists and students themselves.

Furthermore, experience has shown that with all the will in the world, changing practices in HE institutions is an uphill task without the support of top management. eLene-TLC has thus set up a two level system of decision-makers: a Board of Directors from the partner institutions, with the remit of developing a long-term operating model for the consortium, and a wider group of policy makers at regional, national and EU level.

Finally, the work of the eLene partners takes on a further dimension in the form of the eLearning project eLene-EE (Economics of eLearning, 2006-2007). Researchers from 5 of the eLene partner countries are investigating key issues such as cost-benefit analysis applied to eLearning, the impact of eLearning on student performance, indicators of eLearning and digital divides. The practical tool kit resulting from this project should be of great interest to institutions and policy makers throughout Europe.

## Conclusion

This account of the activities of the eLene partners, through three eLearning programme funded projects, demonstrates how transnational collaboration can lead to sustainable results beneficial to the wider eLearning community.

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# EVALUATION OF PARTNERSHIP PROJECTS – A PRACTICAL MODEL TO MEET THE CHALLENGE

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## Background from European projects

Experiences from several national and international projects show that project evaluation is a challenging part. A systematic approach has been developed for simplification of the work. The model has been developed through a number of stages, from more or less intuitive approaches in the 1990-ies to the present more systematic and ICT-supported system. The method is applicable for formative and for the summative requirements. Focus of the projects has varied, but ODL (open and distance learning), NL (net based learning) or more recently e-learning, have been central topics in most of them.

Earlier projects include **JITOL** (Just In-Time Open Learning, 1992-94) which was a pioneering ODL project under the fourth framework programme, **NITOL** (Norway-net with IT for Open Learning, 1994--) was a national, collaborative project, **MENU** (Model for a European Networked University for e-learning, 2001-03), was among the first projects under the eLearning Initiative and **GVU** (Global Virtual University), a branch of United Nations University, launched in 2003, based on the MENU model. More recent projects applying the model include **B-learn** (2005 – 07) with focus on assistance to teachers at traditional universities in designing *blended learning* and **QUIS** (QUality in e-learning, Interoperability and reusability of e-learning material and development of Standards, 2005-06), another European project under the eLearning initiative

## Structure of the model

The model has been finalised for the evaluation of the two recent projects related to e-learning, B-learn and QUIS, thus it is quite natural that the use of Internet has a central position. Two other principles are

- self-evaluation of activities done by project key actors;
- evaluation of products performed by the internal or external evaluation team.

An online questionnaire is applied to report facts and details about activities in different parts of the project. In the present model work package leaders are chosen to fill in the questionnaire. For other project structures different key actors may be selected.

For evaluation of products, each output, report and product is examined seriously by the evaluation team who looks at 1) structure of the report or product, 2) content, user friendliness, results/conclusion, 3) language, clarity, appearance – and then attempts to summarise and evaluate the total product in the light of quality, its value for readers/users. On the basis of activity and product evaluations, the evaluation team has to apply their knowledge and experience within the field in question to give their final views on the project as a whole.

## Summary of the evaluation model

The model recommends formative reports once or twice during the project period as feedback to all project actors, WP leaders, their staff and the project managers. It is very fruitful to have joint briefing sessions where the evaluators exchange points of view with the whole project team, discuss weak and strong results, clear out possible misinterpretations and give recommendations for further activities.

Having the intermediate evaluation reports as a solid background, the composition of the final, summative report becomes a manageable task for the evaluators – and an important document for the project leader when writing the final project report to the sponsors and other stake holders. For an internal evaluation team, it is a particular challenge to take on the role as an honest and critical friend or colleague, e.g. when the project leader or the WP leaders do not manage their tasks well enough. For such cases it is perhaps simpler for an external evaluation team.

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## KEY SUCCESS FACTORS FOR ANDRAGOGY IN E-LEARNING – SITUATIONAL LEARNERSHIP AS THE NEW PARADIGMS FOR OPEN AND DISTANCE LEARNING CONTENT DEVELOPMENT

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The relationship between eLearners and eLearning content developers must adapt new pathways. The relationship between eLearning demands and the eLearning content developers must also adapt new pathways and new forms of interaction. New paradigms to conceptualize the relations between the eLearners and facilitators must be proposed in order to develop eLearning content focussed on the needs of the individual eLearner. This field requires different and differentiated treatment than what is usually offered in higher education. Lack of adequate learning time, the need to access knowledge immediately, and a process model that is self directed is fuelling the need for new eLearning paradigms. These paradigms must be explored and new didactical approaches must meet the requirements of eLearners. As a result, the role of the teacher has to become more oriented to facilitate the learning process. In this sense, the role of the teacher as a leader has to change and adapt to this new situation. To describe this new paradigm a new concept must be introduced and detailed: Situational Learnership. This term has been used in the business management arena since the 1960's as "Situational Leadership." We understand "Situational Learnership" as the different interaction that takes place between the learner and the teacher based on the maturity level of the learner, the definition degree of the task that must be developed by the learner, and the amount of time the teacher must devote to the learner in each situation. The situation of the learner modifies the role of the teacher and the kind of eLearning materials that must be developed. The basic definition in the business management context is that mature professionals are those who "want to do their job and also are able to do it." Based on this definition, the "Situational Learnership" conceptual model is developed in order to show how to lead eLearners at different levels of maturity and how eLearning materials must be adapted to suit the levels of individual eLearners. This article will detail this aspect of the model, and will define the different kind of eLearning materials that are required for each step of the learning process. Content developers will have many opportunities for growth and at the same time face many obstacles.

According to all the factors under analysis, learning process and significant learning have different characteristics depending on the personal situation of the learner. These characteristics are changing the process and establish parameters to set up the e-learning activities, materials requirements' and interaction with the expert. Continuing education providers must consider what kind of learning activities they are programming, what is the target group and what are the characteristics of this group. This is key information to select the learning modality, to prepare the materials and to configure the team to develop the activities, according with the learner's maturity pathway. This previous study of learning activities will suppose a first warranty of success and will help to design personalised actions to cover the real needs of the student. Most part of the unsuccessful "open and distance learning" (ODL) activities developed in Europe are based on forgotten the learner in ODL has something very easy to lose: the attention.

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# IN PURSUIT OF IMPROVING LEARNING THROUGH THE USE OF TECHNOLOGY: THE E-TUTOR'S ROLE WITHIN DIVERSE E-LEARNING METHODOLOGIES AND APPROACHES

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## Introduction

This paper reports on an ongoing EU Leonardo da Vinci project, E-Learning Facilitators (ELF), which was set up to investigate to understand how the role of the e-tutor might be able to improve the provision of e-learning. All institutions and organisations concerned with this investigation offer learning opportunities within the post-compulsory sector.

In view of this ongoing interest, the ELF project; a pilot project (protocol n. I/05/B/F/PP-154178) under the framework of the EU programme "Leonardo da Vinci", was set up in October 2005, with its main aim to analyse the role of the e-tutor as a foundation of e-Learning systems.

## Aims of the ELF Project

In terms of this study, it was felt that competences seemed to change according to the aims and objectives of the training process, on the methodology upon which the e-learning course is founded, and relate to the different typology of target groups. This investigation was based on the hypothesis that e-tutor training processes can be identified and improved, and the ELF project seeks to ascertain existing characteristics of e-tutors and whether or not these are satisfactory. Thus, this research aims to define what an e-tutor needs to know and do to in order to provide effective e-learning.

## Research Questions

1. How have e-learning facilitators built their competences?
2. How and where do they have acquired the knowledge, know-how and attitudes?
3. What kind of learning experience they have, both formal and informal?
4. Have they found appropriate training schemes?
5. Are they satisfied with this training?
6. Does it lead to accommodating the expectations of the learners?

## Main Methodological Approach

It would seem that the same professional role can be "interpreted" by the designer in different ways, with different skills and different tasks, according to their training process typology. The methodological analysis grid was selected as the starting point of ELF because it is a quick tool for strict, exact and easy-to-read analysis of theoretic models, typologies and methodological approaches. This tool was chosen to provide researchers with homogeneous and comparable qualitative results.

## Conclusions

The ELF network has grown to include other target groups, such as research bodies, educational bodies, policies makers, social parts, categories associations, etc. It has created a collaborative web space open to those interested in cooperating in these research activities, sharing processes and results of the project and in to dissemination and valorisation activities. The ELF website offers a free and usable tool for discussion and any researchers outside the project network who are interested in collaborating within this virtual e-tutor community are welcome to participate.

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# SYSTEMATIC IMPROVEMENT OF ONLINE AND BLENDED COURSES THE COMMUNITY OF INQUIRY MODEL EXTENDED

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## Introduction

Online courses are easier for researchers to study than face-to-face courses. In contrast to face-to-face courses, the discussion forum that is the core of an online course is available immediately, in a printable transcript. This has attracted the attention of a number of researchers since online courses became common during the 1980s. One model for the systematic analysis of online discussions within courses is the Community of Inquiry (CoI) model, first outlined in Garrison, Anderson, & Archer (2000). This model has been adopted and adapted by a number of researchers and research groups studying various aspects of online learning. Much of the ensuing literature is deposited at or linked from the Communities of Inquiry website at <http://communitiesofinquiry.com/>

## The Community of Inquiry model

The Community of Inquiry model posits three elements that, taken together, can be used to describe an online discussion supportive of critical thinking resulting in deep and meaningful learning. These three elements are described concisely in Garrison (2006a):

*Social presence reflects the ability to connect with members of a community of learners on a personal level. Cognitive presence is the process of constructing meaning through collaborative inquiry. Finally, teaching presence is the crucial integrating force that structures and leads the educational process in a constructive, collaborative, and sustained manner.*

The cognitive presence element is described through a model of Practical Inquiry. This model describes a circular, iterative process of Triggering Event, Exploration (brainstorming), Integration (synthesis) and Resolution.

## Extending the model

A large number of research studies using this model to examine the online discussion component of courses have found that such discussions usually do not move beyond the early, exploratory stages of critical thinking. We believe that researchers have found little evidence of the more advanced stages (Integration, Resolution) because they have been looking only at the online discussions. We propose to extend the CoI model beyond the online discussion to encompass all parts of a typical online course: the course guide and readings supplied to the students; the online discussion; the students' written assignments; and any experiential components that may form part of the course. We are in the early stages of a research project that should demonstrate the feasibility or otherwise of this extension of the model.

Furthermore, we intend to add a "horizontal" analysis of the various course components. That is, we want to see if there is a flow-through of elements of critical thinking from one component of the course to the next, or if each component is more or less unconnected to the others. For example, if the students are exploring ideas in the online discussion, are these ideas closely related to the learning objectives designed into the course package? If the students are integrating ideas as they construct their written papers, are these ideas taken from the online discussion, or are they unrelated? In the experiential component of a course (e.g., a practicum, or a service learning placement) are the students making use of what they learned in other components of the course or not? If not, what revisions need to be made to the various components of the course?

At this conference we will be presenting early results of our attempt to extend the Community of Inquiry model.

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## EVALUATING E-LEARNING QUALITY OF AN ON-LINE REPOSITORY FOR VOCATIONAL TRAINING OF AUTOMATION TECHNICIANS

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The paper is based on experiences from following the development of resources and performing evaluations during the project AutoTech, funded by the Leonardo da Vinci programme. This project has developed a repository of on-line resources for in-service training of automation technicians. These resources range from texts through animations and videos, to interactive simulations and simulation based games. The on-line repository has been developed and is distributed through the PIDstop platform, designed and used for similar resources in collaboration between Cyberlab and the Norwegian University of Science and Technology

As a background for evaluation the e-learning quality of the repository, the paper outlines the different possibilities for learning that the different types of resources offer. Further, Kolb's Experiential Learning Cycle is presented to show how the diversity of resources may meet different learners' preferences and facilitate different aspects of the learning process.

Having established this background, the paper presents and uses two models for evaluating the e-learning quality of the on-line repository, both developed for the British Educational Communications and Technology Agency. One addresses the quality of the tools and resources, taking into account such issues as infrastructure, technical standards, content and pedagogic affordances, while the other focuses on pedagogical principles for e-learning.

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# FINNISH ENVIRONMENTAL LAW ONLINE: CONTENT TEACHABILITY IN THE CASE OF OPPILOKKI

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## Introduction

The main aim of this paper is to introduce the concept of content teachability which is, often unconsciously, present in the discussions around Web 2.0 -ideology with the aspects of mobility, flexibility, interaction, personality, etc. The second aim of this paper is to introduce the OppiLokki –virtual learning platform for environmental law. OppiLokki is developed in co-operation with the Institute of Law and Lahti Unit at the Helsinki University of Technology. The case of OppiLokki introduced here is one example how content teachability may be enhanced with learning technology.

What is the basis for content teachability-orientation? It is an ideal that technologies should be designed from a user-centered approach. However, usability engineering lacks pedagogical support for teachers because it is a field with long traditions in cognitive science, psychology, technology and philosophy. Therefore, more discussion is required about teachers' realistic opportunities to actively design and implement network-based education based on their didactical expertise. In spite of pedagogical focus content teachability relates, in some parts, to usability engineering.

Discussions in this article about content teachability are based on the doctoral dissertation project of the author. Descriptions about OppiLokki-platform in this paper are widely based on the articles by Matias Warsta.

## Content teachability as pedagogical design and added value

Research in network-based education, based on socio-constructivist paradigm, is strongly emphasizing collective learning processes and psychological aspects. The role of subject matters and perspectives of the teacher in this paradigm may be unclear. Therefore the educational technology still often lacks the pedagogical support for the teachers. Content is relevant because usually facts and concepts are central in learning and contents need to be learned in a certain order. Content teachability may be analysed e.g. from the viewpoint of classic Deming's Wheel or plan-do-check-act model (PDCA). In the educational setting the basic idea in the PDCA-cycle is to provide added value for the contents. In highest levels of the model it is possible to acquire for example game-like captivity in learning difficult algorithms.

To summarise, content teachability is a concept that may be used in analysing pedagogical design of digital learning resources. With the term it is possible to describe the pedagogical added value for the contents when technologies are applied.

## Towards cognitive catalysts with OppiLokki-platform

Currently, OppiLokki offers extensive digital learning resources in environmental law including interactive characters (flash-animations, quizzes, multiple-choice assignments, e.g.). The future challenges of OppiLokki lay especially in developing the communication features. For example some piloting with promising pedagogical results has been done in sending real-time video and voice over internet with the OppiLokki -streaming tool. Technological challenges relate mainly to the network security settings, nowadays the bandwidth is usually a problem only in the developing areas.

The developers of OppiLokki are aiming to take the resources, guided with PDCA-cycle, towards Feldstein's "cognitive catalysts". Catalysts are according to him like "artifacts that function like enzymes for the intellectual digestive system", which should be created and offered for students. He continues that these catalysts can be learning content, learning activities or a fusion of the two. OppiLokki is one example of a virtual space where pedagogy, technology and contents may match well together – and end up to be cognitive catalysts with high level of content teachability.

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# MEASURING IMPACT OF E-LEARNING ON QUALITY AND LEARNING OUTCOMES A PROPOSAL FOR A PHD PROJECT

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## Introduction

In the Information Society, the term eLearning is widely used, when referring to the application of ICT to Education. This term, when analysed in a simplistic way, means "electronic learning" or learning using electronic media. However, the definition proposed by the eLearning Initiative of the European Commission, eLearning should include the use of multimedia technologies, and specifically, the Internet with the purpose of increasing the quality of Learning. It should also facilitate collaboration and access to resources and services.

In Higher and Continuing Education, the use of eLearning methodologies is becoming a common resource. At this point, we have probably passed a first stage of eLearning implementation – experimentation. After a first stage where pilot projects were implemented and strategies were defined, we come to a phase where eLearning implementation is more mature. It should now be possible to find consistent examples of the use of eLearning in Engineering Education, with several years of application. It should be possible, at this time, to evaluate the impact of eLearning methodologies on the Learning Outcomes.

## The proposal

The work here proposed intends to address the problem of measuring the impact of eLearning on Education, through the analysis of Learning Outcomes. It will focus on answering the following questions:

- Is eLearning having a positive impact on the quality of Education?
- Are Learning Outcomes affected by the implementation of eLearning?
- How can we measure the impact of eLearning on Education?
- Is it possible to identify good practices of eLearning implementation that lead to a positive alteration of Learning Outcomes?

The scope of the study includes case-studies in Higher Education, pre and graduate courses. Also, cases of the use of eLearning in Continuing Education will be addressed. Authors intend to collect case-studies of courses that have been using eLearning technologies, in different contexts and Institutions. Data collected should include information about the implementation and Learning Outcomes of the course, before and after eLearning. Using a considerable amount of data, this study aims to identify a potential trend of alteration of results of Learning Outcomes. If possible, this study will try to find a relation between the increment of Learning Outcomes and the implementation of eLearning.

Authors will look for collaboration with other Institutions, to include a wider variety of strategies and methodologies of eLearning implementation. It is not an objective of this work to evaluate on-line distance learning courses. It intends to address eLearning in a broader view, as it is implemented on the generality of Higher Education Institutions.

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# EXPERIENTIAL LEARNING E-PORTFOLIOS: PROMOTING CONTINUITY BETWEEN ACADEMIC AND WORKPLACE LEARNING THROUGH ICTs

*Judith O. Brown, Barry University School of Adult and Continuing Education, USA*

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## Introduction

The purpose of this paper is to examine the experiential learning e-portfolio's potential to promote continuity between academic and workplace learning (Brown, 2000, 2002). The e-portfolio not only enables student/workers to articulate their prior professional and civic learning but also to demonstrate it through the use of information and communication technologies (ICTs). Sometimes referred to as the Digital Notebook, the e-portfolio allows learners to trace the development of their thinking and learning over time and to show those competencies to the university and to employers (Maloney, 2007).

In this presentation the author will examine two e-portfolio pilot program institutional case studies in regard to the following research question: Does the development of an experiential learning e-portfolio augment the connection between academics and the world of work more effectively than a paper media portfolio?

## Background

The portfolio in adult higher education is a purposeful compilation of document-supported descriptions of learning outcomes acquired from professional and personal experiences. Paper-media portfolios have been utilized in the United States in adult undergraduate programs since the late 1960s (Michaelson & Mandell, 2004). In addition to their popularity in hundreds of colleges and universities in the USA (Flint et al, 1999), portfolios, as a method of prior learning assessment (PLA), are used in higher education in Great Britain, Canada, Australia, mainland Europe and South Africa (Evans, 1999; Hall, 1991; Osmam, 2002).

Credit-bearing portfolios to expedite degree completion – often referred to as experiential learning portfolios – are most common among adult undergraduates in the United States. Outside of the United States, portfolios also serve as a vehicle to satisfy university entry requirements. Regardless of their purpose portfolios serve as a PLA option designed to help adult students communicate and document college-level learning from real-world settings.

## The Promotion of Continuity of Academics and Work in e-Portfolio Development

Reading a book, seeing a play, going to the movies – three very different media experiences that each have a unique dynamic and impact on the human psyche. The same can be said when comparing the development of a paper experiential learning portfolio to an e-portfolio. What both have in common is the gaining of personal and professional learning outcomes from the process itself (e.g., communication, organization, self-knowledge) – beyond the reflection, identification, analysis, evaluation and articulation of prior learning from non academic venues. In the case of the e-portfolio, the utilization of photos, videos, hyperlinks and other information and communication technologies has the potential to present a different dynamic to the process of prior learning assessment. “[It] is just one model for thinking about how technology can enhance teaching and learning” (Maloney, 2007, p. 27B). The self-inventory process of portfolio development, in general, and the demonstration of knowledge facilitated by e-portfolios, in particular, engenders a powerful tool that promotes the continuity between academic and informal workplace/community learning while exhibiting the uniqueness of the learner.

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# THE USE OF ONLINE JOURNALS IN A DISTANCE EDUCATION COURSE

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## Introduction

In the last few years, distance education – although it has experienced a lot of problems – is considered as a reliable alternative solution to the face to face traditional education. Educational technology can contribute to limiting of the educational problems and improving the quality and effectiveness of distance education. Students' online journal is a powerful pedagogic approach that can, with other tools, contribute to the resolution of these problems. In this paper online journals are examined as one part of an implementation of several pedagogical patterns that support the learning process in a virtual learning environment.

## Methodology

This case study analyzed the weekly online journals posted on an asynchronous electronic exams system that was used as a course requirement. Data were collected in the Autumn of 2005, from undergraduate students, in an advance communication course about New Technologies in Physical Education taught at Democritus University of Thrace and at University of Thessaly. The course lasted 12 weeks and used a constructivist approach (student-centered). Moreover, online journals provided an asynchronous, text-based environment that gave students the opportunity to reflect on and articulate their thoughts at their own pace, consult the readings of other materials, and reflect on other students' ideas.

This case study used both quantitative and qualitative approaches to describe and analyze patterns of participation and interaction in the course as revealed from students' online journals. The quantitative data include the total number of journals posted by each student every week and the qualitative data consisted of the content analysis of the journals.

## Results and Discussion

Issues identified from students' online journals to be helpful were coded in the following categories:

- Encourage Critical Thinking
- Encourage Reflection and Questioning
- Feedback for learning process and quality of lessons
- Monitoring – Assessment student progress
- Monitoring Team interactions
- Suggestions for improvement
- Learning Experiences
- Problems Solving
- Verify Assignment Completion

According to the constructive theory, the active participation of students is the key for the success and quality of study programs. Students' reflective online journals constitute a powerful pedagogic approach that encourages active participation, meta-cognition and critical thinking. They can also play a role in beating isolation and promoting communication and interaction between tutor and students thus generating the necessary feedback for both the learning process and the quality of the lesson.

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# HEALTH AND INFORMATION TECHNOLOGY – A MULTIDISCIPLINARY INTERACTIVE NET BASED COURSE

*Lena Kransberg, Lasse Bourelius, Blekinge Institute of Technology, Sweden*

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## Background

During spring 2006 our first multidisciplinary net based course in Public Health and Information Technology was developed and realized. This experience of giving a course in Information Technology for students interested in Health and Health care have inspired us to go further. Blekinge Institute of Technology has focused on applied IT and sustainable development of society and industry/business. This focus is also a part of the education in Public Health and Health Care.

## Challenge and goal

During the developing period the challenge was to understand what was possible to integrate both practically and theoretically about IT for this kind of students. How should we connect Information and Communication technology to health? The goal for the course was to realize a course which inspires and prepares the students to critically review the technical solutions where they could find health aspects and try to understand the enormous technical development. One aspect of the development is the digital divide in the population and which aspects this could have for health.

Is digital divide the new system of segregation?

## Tutorial

A part of the tutorial said: "Information- and communication technology (ICT) is a topic that has had a tremendous development during the past years and created a lot of new possibilities in Public Health and Health Care. Focus in our course is ICT in a public health aspect. A lot of information could be found through the web but also with help of handhelds and smart phones. It could be information about local health status, health risks or information about good health factors. On the web you could find interactive pages where you as a reader (and student) could interact and get response. The digital divide and gap in the society is unequal and knowledge about this is a prerequisite if ICT should be used in health information and promotion. To know different concepts is also a prerequisite for those who will get more knowledge about ICT".

## Web 2.0 web applications, integrity and learning objects

A lot of new information technology was tested as Web 2.0 application (social software), IP-based videoconference from home (Marratech), create your own website (web editors), advanced searching (using the [www.searchguide.se](http://www.searchguide.se)). Parts of the course were to critical check and discuss about both others' web productions and the students' in the course web productions. Another part was to discuss and learn about technical solutions possibilities and dangers. Example was to study surveillance of mail and web (echelon), and how new mobile technique could be used to position old senile grandmother and what kind of risks we want to take. Which could be a part of restrictions in our integrity?

To get help with all this the course has got a lot of help from UR, (Swedish educational broadcasting company) to produce learning objects as short pod casting radio productions. The course has been a challenge for the students because the target group was not "technical people". Instead the students came from Health Care, were middle age women and had studied public health courses earlier.

## Learning methods

The course was net based but had a few voluntary meetings on campus. By experience we knew that a faraway student only goes to campus if absolutely necessary. There is also a risk that some drop out from the course because the travels are so expensive and/or give you a lot of trouble with your ordinary work/life. To avoid dropouts of students of that reason we offer the students to participate in the campus seminars by IP-based videoconferencing. It was a

new experience and a challenge to have students in the classroom and others participating through the net at the same time.

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# VIRTUAL PROBLEM BASED LEARNING FOR MEDICAL STAFF

## THE MEDITOP PROJECT: DEVELOPING AN ONLINE COMMUNITY OF PRACTICE

*Ilaria Mascitti, Federica Funghi, Emilia Primeri, Consorzio FOR.COM. – Formazione per la Comunicazione, Italy*

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### Introduction

The MEDITOP Project – International Virtual Classroom for Health Care Professionals – is a two-year pilot project co-funded by the Leonardo da Vinci Programme, with the specific aim of addressing updated and effective training for health care professionals. Based on the awareness that e-learning is evolving together with the World Wide Web, and that new social software and technologies, as the so-called Web2.0, deeply influence and support education and training, MeditopEU project intends to experiment the virtual Problem Based Learning (PBL) approach with the support of a Video-Based Collaborative Teaching System.

### The Problem Based Learning approach

PBL basic motivation is based on the fact that students develop the ability to use facts (knowledge) to solve problems. Knowledge is considered as a means not as a final achievement. What is changing in a PBL approach is the “angle”, the assumptions of the teaching activity: neither a pure lecture based training activity or a practical on the job training, nor a work based training but a learning strategy that exploits cognitive and metacognitive approach. In such a way the learners take charge of their education, taking responsibility for their own learning. The PBL approach is specifically indicated for adult learners, in fact it promotes a Constructivist approach where students activate and become aware of their prior knowledge and build a new knowledge. Contents are introduced by a teacher/facilitator as a real-world problem and the students are required to work in small groups to identify what they know and what they need to know in order to solve the problem. The online discussions, moderated by the facilitator, take place using the Virtual classroom tools (chat, video chat, polls, whiteboard) and represent the core of the PBL process. The Web2.0 tools (social software) such as blog and wiki are used to ensure the continuity among the online group discussion sessions, allowing the participants to express their feelings, opinions and thoughts (blogs) and to suggest and edit material, e-books, articles, papers to deeply study the subjects relevant to the problem (wiki).

The MEDITOP Project exploits the potential of new information and communication technologies to promote an online PBL system facilitating the cooperation within specific groups of doctors who participate in the experimentation.

### The added value of MeditopEU community of practice

The added value of the MeditopEU Project is the promotion of collaborative learning processes among doctors/learners from different European Countries who virtually meet in a synchronous and asynchronous way to develop a shared understanding and to build a new knowledge. The intention behind the MeditopEU Project is to experiment a multilingual e-learning course for paediatrics and to create, according to the definition articulated by people such as Etienne Wenger in the 1990s<sup>1</sup>, a community of practice. Wenger says that a community of practice is characterised by “a shared domain of interest” where “members interact and learn together” and “develop a shared repertoire of resources”. In compliance with this definition, the community of practice promoted by MeditopEU is set up by a group of doctors with a common purpose and who share similar professional background. New group knowledge is created when the members of the community are encouraged to make explicit their unrecognised resource. Since the MeditopEU Partnership is built of 11 partners from 7 different European countries, the participants/doctors learn in an internationalised context and cope with geographical distance and time, culture and language differences. The added value of the international context is that participants are able to offer a multi perspective treatment of the subject sharing not only their own experience or expertise but also their own culture. The MeditopEU community of practice will be open, the participant may then create links with other professionals at other locations allowing the community to increase and develop thanks to the use of social software.

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<sup>1</sup> Etienne Wenger is an educational theorist and practitioner, known for his formulation (with Jean Lave) of the theory of situated cognition and his work in the field of communities of practice.

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## LAUNCHING A "DISTANCE EDUCATION PROGRAM" IN A "SITUATED LEARNING ENVIRONMENT"

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During a recent academic event, the possibilities of using the infrastructure in the University of Padua have inspired the authors of this paper to embark in a **pharmacy online initiative**. It started as a thesis work on the status of pharmacy practice in the city of Padua, showing the importance of the education of the healthcare staff. It is envisaged that an online program can eventually replace the existing face to face continuing education program. Staff in pharmacies using already computer facilities in their work can alternate their daily activities with an asynchronous training program.

We named the project "Farma-on-Line" following an already existing online help facility in the Faculty of Pharmacy. We envisage the inclusion of instructional material on marketing, operation, research, finance, distribution, education, association in the pharmacy practice. Following the Bologna process all health staff are required to complete a continuing education program. We hope that an online service can improve the outcomes of the learning process. Connections between different institutions could help to enhance the program.

We hope "Farma-on-Line" will be a success in the pharmacy world. We strongly believe that "**Situated Learning Environment**" is the best answer to the difficult political, economical and social conditions that educational institutions are facing today. We share with Poole and Bates the optimism that "merging digital technology will make the dreams of Educational Technology Research" a reality. New generation of participants are demanding better learning environments.

### **Acknowledgement**

To Prof. Claudio Dondi who showed the participants of EDEN 2006 Annual Conference in several contributions how "civic activity" can help in remodelling DEP.

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## PRACTISING ESP WITH WIKIPEDIA: IMPLEMENTING COLLABORATIVE LEARNING WITH ADDIE

*Guzman Mancho, Alcala University, Spain*

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Collaborative learning has been implemented in activities of two subjects related to English for Specific Purposes at Alcala University (UAH), Spain. The instructor justifies this implementation considering the institutional promotion of e-learning using a VLE, and the need for our students to produce real language by generating content on *Wikipedia* in teams, and to master e-competences such as online team organization and asynchronous communication.

The implementation process has been modelled following ADDIE. This paper describes the analysis of pedagogical needs in some collaborative learning activities during the year 2006-07 at UAH. In fact, the objective of the implementation was to investigate the extent to which the prototyped learning activities are a success or a failure in term of the teams' knowledge generation; a secondary objective was to identify the degree to which e-competencies prevent or not individual students from learning.

The analysis of needs was performed in four steps. After designing the same activity in both subjects of which main learning outcome was the creation of content on Wikipedia employing a collaborative methodology, teams did the activity. Next, they answered individually an anonymous questionnaire about the class activities. Finally, the instructor analyzed the data to discover how to proceed with the next step of ADDIE.

The data analysis shows that more than half of the teams have not succeeded in ending the activity. However, those teams who finished the activity evidence a high degree of involvement in team-organization and coordination, but their command of tasks for solving organization problem is poor. Moreover, communication channels have not been broken during the process; but synchronous communication tools have been employed instead of the VLE's asynchronous tools.

Considering the next steps of ADDIE, it is suggested that the design of the activity would improve if the assessment of the learning process and result were performed, and students' guidance about the advantages of collaborative asynchronous learning was continually promoted by instructor and institution.

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# BLENDING LEARNING IN A RESEARCH INTENSIVE UNIVERSITY A CASE STUDY FROM THE FIELD OF GEOINFORMATICS

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## Introduction

This paper introduces the principles and the practice of blended learning applied in the context of research-based teaching at the Department of Forest Resource Management (DFRM), University of Helsinki, Finland. The presented case explores forestry-related geoinformatics, but the principles and implications may be applicable in a number of academic disciplines. In the background section of our full paper we make the reader familiar with:

- The strategy of research-based education at DFRM including the philosophy and practical solutions
- Our application of blended learning in the context of research-based teaching
- The incorporating of constructive alignment in the blended learning scheme

## Research Questions

This institutional case study focuses on student perceptions of research-based blended learning. We shed light on students' motivation and engagement as well as on their attitudes about technology-mediated social innovations.

## Methodology

We assessed the student response gathered in 2003–2005 into a web-based feedback system provided by the University of Helsinki. The questions were formulated to encourage meta-cognitive self-evaluation. The merged feedback from different courses, relating to research-based learning aspects and blended learning was evaluated qualitatively, focusing on main patterns of informative response.

## Results

Computer-based satellite navigation exercises were perceived as useful for learning. The value of individual assistant-counselling was acknowledged. Facilitated web-based discussions were considered as both positive and negative experiences, possibly due to the respondents' personal preferences and roles as either campus or distance students. A versatile sample of suggestions for improvements was recorded, relating e.g. to increasing pairwise exercises, improving evaluation criteria, and refining the themes and schedule of web-discussions.

## Conclusions and Implications

Research-based learning is perceived as more or less positive when focusing on *conducting research*. However, when trying to make students *learn from research*, the feedback is more often negative. Long and constructive responses for the recommendation question reflect good motivation and commitment. Perhaps the evaluation criteria and studying in a research-based way should be discussed more in the beginning of courses.

Blended learning as such has not evoked notable criticism among students: they seem to acknowledge the different aspects of the courses quite easily, without paying much attention to the ingredients or possible contradictions of the blending. Thus the objective to make blending "invisible" seems to be achievable. Perhaps wikis and other social web applications could offer an integrated framework for shared knowledge-building to enhance the blending scheme.

As a general conclusion, it would be essential to integrate research and teaching projects more intensively to offer the students projects for research-based learning, and to motivate teachers towards blended learning efforts.

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# THE MODEL OF INTERACTIVE COMMUNICATION IN E-LEARNING

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## Introduction

The principal aim of the abstract is to present the new Interactive Communication Model (ICM) in *e-learning* from basic communication and feedback models.

## The research methodology

The creation of the theoretical model has subjacent continuous investigation and professional experience of *e-learning*. The research methodology has occurred first in the identification and definition of the assumptions, of the constitutive factors and of some random factors/ noises related with the *e-learning* process. Second the elements were articulated and integrated in a feedback communication model. Third the *e-learners'* evaluation as well as monitoring and Total Quality Management (TQM) of the *e-learning* were also involved in the communication *e-learning* model.

## Arguments and findings

Communication and the New Information and Communication Technologies (NICT) constitute core points of extraordinary importance in the growth and dissemination of *e-learning*. The most basic communication models identify three main components: the message sender, the message receiver and the message sent from the sender to the receiver (Schramm, 1995, cited in Smith et al., 1997)<sup>1</sup>. Bearing in mind this simple model and the feedback model, the Interactive Communication Model (ICM) was adapted to the *e-learning* process.

## Conclusions

The use of Internet and Intranet are excellent means of knowledge diffusion and information sharing. The just-in-time knowledge flows can create ascending and descending, horizontal and vertical movements, in such way as to cover the entirely organisational universe.

Multiple communication flows can be generated, creating sources of knowledge, of a dynamic countenance and in real time, that should include the feedback flows of the results, the perception, the learners' performance that should be transmitted to those responsible for the training that, in their turn, will pass the information to the managers at the top, so they can evaluate them in terms of the profitability of investment in human capital.

The dynamics of knowledge flows concentrate on the creation of knowledge databases, electronic yellow pages (Stewart, 1998)<sup>2</sup>, databases of good business practises (Friedman et al., 2000)<sup>3</sup>, in the rapid sharing of knowledge at both internal level and at the level of the big consulting companies, in the adjustment and use of new information technologies, in virtual communities, in benchmarking and in the linkage between organisations and universities (López-Martínez et al., 1994)<sup>4</sup>.

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<sup>1</sup> SCHRAMM, W. (1955) How communication works. The Process and Effects of Mass Communication. University of Illinois Press: Urbana, Ill, cited in SMITH, P., BERRY, C., & PULFORD, A. (1997) Strategic Marketing Communications. London: Kogan Page.

<sup>2</sup> STEWART, T. (1998) Capital Intelectual – A Nova Vantagem Competitiva das Empresas. Rio de Janeiro: Editora Campus.

<sup>3</sup> FRIEDMAN, B., HATCH, J., & WALKER, D. (2000) Capital Humano – Como Atrair, Gerenciar e Manter Funcionários Eficientes. São Paulo: Editora Futura.

<sup>4</sup> LÓPEZ-MARTÍNEZ, R., MEDELLÍN, E., SCANLON, A., & SOLLEIRO, J. (1994) Motivations and obstacles to university industry cooperation (UIC): a Mexican case. R&D Management, 24, Jan, 17-31.

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## COMPETENCY APPROACH IN E-LEARNING

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Conventionally learning courses are based on the curriculum that presents a set of qualification features of a specialty. As a result, very rigid and inflexible learning programs are created that are hardly adapted to the rules of particular educational institution or specific features of learner. That is against the requirements of Bologna process.

The use of *competency approach* allows to clearly define the profiles of future specialists. In this case the integration in development of various learning courses for different specialists' profiles is taking place. This integration is based on the knowledge management methodology including object approach with ontological definition of conceptual model of knowledge used.

In the object presentation of knowledge each learning object appears as a complete semantic knowledge item. Specific learning sequences can be built from the separate objects according to the learner's characteristics and regional and industrial educational needs. Therefore the shift occurs from big and solid courses to the plenty of reusable learning objects available for search and inclusion into the learning sequences. The IMS Global Learning Consortium contributed a lot into the development of the object methodology for learning course building by creation of basic standards in this area.

The development of an object can be carried out by various authors in different environments. The learning objects are located in special storages (repositories) and are retrieved from those repositories while delivering to a student during the learning process. In such a manner the component methodology of the learning sequences building based on the *integrated knowledge space* is realized.

The integrated knowledge space embraces content of related scientific areas based on the principles of knowledge management systems. It integrates, stores and supports content as well as provides access to the content from the e-learning environment. This allows to:

- combine various information sources according to different subjects, specialties and learning actors (students and teachers) within the entire system;
- provide steady development of the system based on the knowledge renewal and continuous accumulation of new experience that teachers and students obtain during the learning;
- deliver each of the learning actors relevant information according to their knowledge, preferences and needs.

For the sake of integration of knowledge in the united space and further forming of learning courses and their components (learning objects) the common conceptual definition of knowledge based on ontology is required. In order to organize the integrated knowledge space the following elements are created: first, the *subject ontology* describing the activities independently from the types of students and forms of education, second, the *learning ontology* defining the structure of learning process according to particular specialty, and third, the *learning object repository*.

E-learning technology based on the subject ontology, learning ontology and learning object repository includes the following technological procedures:

- defining and renovation of a learner model;
- development of a learning scenario according to the learner model;
- education according to the learning scenario.

The process of development and implementation of learning scenario in e-learning environment based on the integrated knowledge space assumes the creation of individual learning sequence with different width of learning material and different depth of particular issues depending on the learner's professional needs, knowledge level and specified competencies of a specialty.

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## FACILITATING CROSS-BORDER SELF-DIRECTED COLLABORATIVE LEARNING THE iCAMP CASE

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This paper reports a case study on cross-border collaborative problem-based learning. The case study took place within the scope of the FP6 project called iCamp, which focuses on technology-enhanced learning. In the framework of the project there was organized a trial where students from four universities across Europe participated in the collaborative learning exercise using various electronic tools for communication. In line with the principle of self-directed learning teachers were given in this exercise a role of the facilitator rather than provider of knowledge. The paper focuses on facilitation related aspects of the trial.

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## INCREASED INTERACTIVITY TO REDUCE DROP-OUT RATE ON DISTANCE LEARNING PROGRAMS – THE CASE OF BLEKINGE INSTITUTE OF TECHNOLOGY, SWEDEN

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Interaction lies at the heart of all education. E-learning is no different. Previous research has shown that the amount of student interaction is likely to improve the distance-learners' educational experience, e.g. Andrusyszyn et al, (1999), and Wright et al, (2000). There is a number of different interactions to consider in education from a pedagogical perspective: since Moore (1989) defined (1) interaction with the content, (2) interaction with the instructor, and (3) interaction with the students, an additional new fourth dimension has been added by Bouhnik, Dan and Marcus, Tali (2006), named *interaction with the system*, the interaction with all of the new computer technologies.

As e-learning programs are constantly being developed and universities have become more financially dependant upon these programs, the reduction in drop-out rates has become an increasingly important issue. This is particularly true for free education providers. Empirical research at Blekinge Institute of Technology, Sweden, suggests that students think there is a strong correlation between interactivity using videoconferences, forum and chats and reduced drop-out rates on distance education programs.

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## BLENDING COUNSELLING AND PROBLEMSOLVING IN SCHOOLS

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The project concerns professional counselling, by the establishment of a new teachers'- forum, a national resource centre for practical problem-solving by Internet.

This forum will also be a contribution towards developing the school as a learning organization, and it will help to strengthen student-teachers' competence in obtaining help – and themselves giving help – by use of modern communication.

The resource centre shall to a great extent contribute to the wider development of the PP-service and teacher training by establishing a professional net service for teachers in basic training. To attain this, we shall also contribute to the school's learning-culture by putting into practice the principles within "blended learning".

The online-based service will thus also focus on the teachers' health, proficiency and well-being, and answer a broad spectrum of work-related questions. Counselling has as its goal to give teachers the ability to solve their practical workday problems in a better way by using the synergy that can be gained by coaching in the teachers' forum. The meaning of this must be specially emphasized for the teachers in district schools.

At the end of the project period this project will collect up the most important experiences undergone and discoveries which have been made in the work of the previous sections of the project. The work will also include an internal evaluation of the project itself. With a relatively large number of agents, there is a great demand for organizing and coordinating the project. And we wish to have experienced-based knowledge as well. The report relates to the aim of the project in its entirety. Problems to be put: (1) evaluation of the online service – how can practical and problem-oriented counselling online be regulated – possibilities and limitations in the widest sense? 2) how suitable does this electronic service show itself to be in practical problem-solving, seen in relationship to the use of resources – an evaluation by the users? 3) an evaluation of VITAL- technology, and its possibilities and limitations as a means of communication and research: the cost of this service?

The project is put forward on behalf of a team of collaborators from The Høgskolen in Bodø with partners from the Høgskolen in Nesna, the University in Tromsø, the University of Oslo, Statped Nord, and the Commune of Bodø, Tromsø, Rana, Aslahaug and Sortland represented by schools on the PP-Service in the Communes.

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# MEDIA CENTRE FOR E-LEARNING – AN APPLICATION FOR IMPLEMENTING EFFECTIVE AND HIGH QUALITY LEARNING

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## Introduction

Weblogs, wikis, podcasts, tags and RSS-feeds have become quite popular forms of using the internet. These forms help to establish a dialogue between actors in the internet and force users to become more (inter-)active. Today there are plenty of modern and easy to use systems available. Modern open source software can be adapted more and more by users itself, instead of changing the programming code.

Three Universities of Applied Sciences in Eastern Finland have carried out a joint project and designed a working environment that combines the production of eLearning, quality assurance and collaborative knowledge construction online. The project is part of the development work of a national Virtual Polytechnic system.

At the beginning of the project we conducted a survey of the students' and teachers' eLearning and ICT skills at these three Universities of Applied Sciences. The data were gathered using structured interviews with teachers and via an online questionnaire to students. We interviewed 90 teachers, and over 600 students completed the questionnaire. The results indicated that there was a distinct need for collaborative working and knowledge building.

For this purpose a collaborative platform was designed for teachers and students to construct knowledge together on eLearning. With the help of this platform both beginners' and experts' solutions of operating online that have proved to be good practices will be published.

## Training, Quality and Production

In our project new techniques were applied in the development of online learning. The project served as a pilot study for designing audiovisual materials and interactive methods, and furthermore, information on special features and roles of different media was collected and produced. As a result, pedagogically purposeful practices to exploit multichannel communication were created. The media centre for eLearning that contains the three previously mentioned segments (production, quality and training) is available at [www.puikkari.fi](http://www.puikkari.fi). Puikkari (a gathering peg used in net fishing) comprises open source server software, publishing platform and communication applications. Plone was chosen as the Content Management System (CMS) in order to be able to produce and maintain easy-to-use and accessible www-pages.

Teachers may independently search for information on implementing online teaching. They can find experiences shared by their colleagues and ready-made courses there. Part of the materials can be freely modified; part of it will be published only after the approval of the publishing committee.

The quality of the whole production and production process is guaranteed by a quality assurance model. The model guides the user to view the whole process of planning, producing and implementing eLearning as a complete entity and not as a series of isolated parts. The application has been designed as user-friendly and straightforward as possible to encourage its active use by teachers. The application replaces the traditional quality handbook.

The aim of the production model is to offer the user a path that guides him/her through the various production phases from the beginning until the end. The process is based on the traditional waterfall model alongside with quality and risk management. This path should help the user to understand the whole production process as a holistic entity instead of mere separate documents or functions.

## Conclusion

The authors speak of a generation of students who have grown up with technology and are more techno-savvy than their teachers. As educators we cannot ignore the changes that have taken place. We must use the same equipments that our students are common with.

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# MAGNETIC LEVITATION SYSTEM AND ITS PRESENTATION IN EDUCATIONAL PROCESS

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## Introduction

The necessity of learner experimental work in laboratories represents one important aspect of engineering education. Students solve practical problems and gain experience and practice needed for their future career. Introduction of real systems increases transparency of the solved examples. The main motivation for using of plants in the educational process is clear physical "visibility" of the controlled dynamics, and also the necessity to exercise all design steps starting with the plant identification and ending with the evaluation of the control results achieved with the particular model. Students like such control education. Unfortunately, the number of students is high in comparison with the number of available real plants. A possible solution of this problem is to prepare animated models of the real system and/or to build remote and virtual lab that gives learners access to laboratories via Internet. The paper demonstrates examples of all these possibilities on the system of magnetic levitation system.

## Magnetic levitation system

The model of magnetic levitation demonstrates one-dimensional strongly nonlinear unstable system. It is designed for studying system dynamics and experimenting with number of different control algorithms based on classical and modern control theory. The system is suitable for students of all level and experiments that can be done to cover wide range of problems, which appear in the industry. The system consists of a coil levitating a steel ball in magnetic field. Position of the steel ball is sensed by an inductive linear position sensor connected to A/D converter. The coil is driven by a power amplifier connected to D/A converter. The basic control task is to control the position of the ball freely levitating in the magnetic field of the coil. The Magnetic Levitation system is a nonlinear dynamic system with one input and one output.

Even if the system dynamics is relatively simple, an attempt to model it in details leads to a model that is complicated and difficult to use. From the input-output view, the plant can be approximated by a single input single output nonlinear dynamic system of the 2nd or 3rd order depending on the modelling precision and with astaticism of order 2.

## Possibilities of experiment realization

In the paper we discuss several possibilities that enable students to become more familiar with the introduced plant. During the educational process students can use at least one of the following ways:

- Matlab or Maple environment that except of control enables 3D visualization of the model;
- local control of the real system;
- remote control of the real system.

When engineering students start to solve the first problem-based tasks they usually meet with computer simulations firstly. Only after that they continue with experiments on the real plants. A computer simulation enables to simulate an abstract model of a particular system. They have the advantage of allowing a student to make judgments, and also to make errors. The process of interactive learning through testing, evaluation, decision-making, and error correction creates a much stronger learning environment than passive instructions.

After short period of simulations students like to start to experiment with real plants. It brings many advantages. Students can work directly with the plant, they can touch it, they can hear the sound, and they can immediately see the real response to their inputs. The control velocity depends mainly on the dynamics of the system and on the design of controller. The control of plants can be done either locally or remotely. Both ways have own advantages and disadvantages.

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# E-LEARNING FOR COMPETENCE DEVELOPMENT IN SMALL AND MEDIUM ENTERPRISES (SME), MEETING THE CUSTOMER NEEDS

*Bengt Nykvist, Mid Sweden University, Sweden*

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## Introduction and background

During the first years of this decade a number of projects were run at Mid Sweden University in the field of e-learning. Feedback from the learners, typically from working students and especially their employers, informed us that we did not quite meet their needs in some aspects. We had requests such as:

- The learning should fit into the planned competence development of the company / organisation
- Smaller size learning modules
- Learning should be available "on demand", e.g. it should not be necessary to apply in April for a course starting in September
- More flexibility in time, e.g. possibility to study during low season

In 2006 a new project started up, addressing these requests. This project is called NU, in Swedish short for "Nätbaserad Uppdragsutbildning" (roughly translated "Netbased on Demand/Commissioned Education"); the focus of the project is using the net for commissioned courses. Target group for the courses are SMEs, in which employers seldom invest in formal education for employees and which often lack formal competence development plans. Typically the initiative to apply to a course comes from an employee, but a manager makes the formal decision.

## Business model and learning modules for practical tests

Development of the business model for the net based commissioned courses in the NU project is carried out in co-operation with Nord-Trøndelag University College, Sør-Trøndelag University College and The Norwegian University of Science and Technology. The project is supported by EU (European Regional Development Fund) together with public and private contributors as part of the Interreg IIIA programme. The most difficult parts of the NU project are to evaluate different business models for this type of e-learning. One attractive idea might be that a company, or group of companies, purchase access to a subject package at a fixed yearly amount. Activities that require resources from the university like tutoring and assessment could be priced per hour.

At Mid Sweden University we built a course tree with about 20 learning modules. The learning modules are not loaded into a learning management system (LMS), instead they are easily available on the net, protected only by a password. We made the decision not to use a LMS partly based on previous experiences with learners from SMEs, which do not want to spend valuable time learning how to use a LMS when they could be learning their subject and solve their problems instead. Rather than "forcing" the learners to use our LMS we try to encourage them to construct their own personal learning environment, e.g. we suggest they use Google groups for discussions and communication with their tutor / teacher.

Each learning module is divided into three parts: an introduction with a module test with autocorrected questions and open questions for reflection and self-assessment, a second part with reading material and links to material on the net and finally a third part which consists of a written exercise that the learner does in his or her own workplace. This last part is supported by a teacher or tutor from the university, preferably in cooperation with the learner's manager / supervisor.

## Conclusions and experiences

This far, the results of the project are good; the business model has been presented to potential customers at several occasions and received interest. The learning environment is currently undergoing tests at a number of companies. Most appreciated is the easy availability, the flexibility in time and the possibility for the student to work with real on site problems at his or her own workplace.

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# E-LEARNING QUALITY IN SMEs – RETURN ON INVESTMENT OF E-LEARNING IN SMEs

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## eLearning Quality for SMEs

Small and medium-sized enterprises (SMEs) have a central role in the European Union that requires special economic and social policy answers, namely, the access to education and continuing vocational training.

Under SMEs framework, e-learning should have a top-down approach and the commitment of the enterprises decision makers. On the other hand, e-learning efficiency will be achieved through end-users motivation towards training and improvement. The use of flexibility and facility of access to online training environments are also factors with strong influence in the return on e-learning investment.

This presentation offers the results of the ELQ-SMEs partnership by presenting one of the project products - a simple tool for calculating the Return on Investment of e-learning that addresses the needs of SMEs from the trade and services sector.

The general aim of the project is to promote the use of new multimedia and a guidance and counselling approach in order to promote the quality of e-learning by facilitating access to online resources and training services as well as tools to evaluate the quality and the return on investment in e-learning targeted to SMEs.

## Calculating Return on Investment

Return on investment is the yield of an investment in relation to the costs involved in it expressed as a percentage. In view of the fact that ROI does not necessarily involve money, a percentage is calculated. For example, expenditure can also be measured in terms of time. In this case, for example, we refer to the time required to break even. However, we can often see that it is practical to express units in terms of money in order to state added value in the form of a ROI percentage in this way, and to facilitate comparison.

A simple tool for calculating the ROI of eLearning has been developed and will be implemented in SMEs. This tool is providing tips as the variables, the indicators and the ROI components, which can be used to calculate ROI of e-learning courses.

Results showed among others that SMEs do not invest in e-learning, because they feel that the added value offered by this type of education has not yet been adequately revealed. One of the most common methods of showing that investing in education is worthwhile is by comparing income and expenditure in a clearly defined manner. Calculating ROI, or return on investment, is a classical method which is used for this purpose.

In detail the presentation will give answers on the following study questions providing feedback on the ROI Methodology:

- The conditions of application
- The problems/difficulties
- The changes and adaptations made by each partner in the methodology/instruments used during application
- The results of ROI methodology/instruments testing
- The required conditions for the transferability of these results and outcomes
- The way how these instruments will be used in further situations, the intentions of selling those products or other suggestions.

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## SHIFTING E-LEARNING IN SMEs TO A WORK-BASED AND BUSINESS ORIENTED TOPIC

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### Introductory aspects

Small and medium sized enterprises (SMEs) in Europe account 99% of European business and embrace very different organisational structures demanding for complex knowledge and competences and so also for learning programmes to achieve them "just in time" in order to do their business successfully.

E-learning (particularly relied on Web 2.0 services – e-learning 2.0) through the flexibility and facility of access and of personalization could fulfil such requirements, could support needed staff up skilling and be an enabler of life long learning. But an increased use and impact of e-learning can be observed only in large European companies; in the most European SMEs it does not meet initial hopes and expectations. One solution to improve this situation is to provide SMEs as users and as service providers with training models based on the integration of learning in their work processes and supporting their business. Groups of SMEs have to be identified for building such models based on quantitative and qualitative criteria because it is too expensive to develop solutions for individual SMEs. These models have to include cooperative and communicative forms of learning.

### e-Learning models for SMEs

Studies and projects (i.e. ARIEL – [www.ariel-eu.net](http://www.ariel-eu.net) coordinated by the author) identified factors for ICT-based learning in SMEs like training needs and learning culture within the SMEs, lack of appropriate materials, lack of time, of access to sufficient bandwidth to ensure high quality training and lack of user friendly instruments. It is very difficult to develop models for e-learning providers in order to achieve a market development with profit and to avoid financial mistakes made by Internet start-up companies. Referring to the users of e-learning, models which support their work and aim at optimizing organizational and financial matters of the learning process are required. Successful e-learning models are based on a coherent, harmonious concept including organisational, social, economical and technical aspects. An e-learning model for a company should describe the e-learning strategy of the company. It is important that the e-learning model is supplemented with a corresponding business e-learning model in order to provide a framework for the economical part of an e-learning strategy in the SME linking the planning of the e-learning strategy with the process level of the implementation. A basis for building an e-learning model is a reference model. It sets out the learning/teaching/research problem addressed, a set of tasks needed to fulfil this, the human and computer based workflows, the agents, applications and/or tools used, the data flows and operations involved, the services that will be called and the service interface specifications. A design can then be created based on this information leading to an implementation which can then be referred to by others who are trying to solve the same problem. Sustainability e.g. medium- and long-term profit maximization of a learning model bases on the integration of all partial models of the system which should be defined consistently. Some aspects to be considered for the consistency of a learning model are: the target group from the e-learning program and for the e-learning providers and the market segment have to be adequately, the e-learning strategy and the planned investments to realize it should aim on long-term or medium-term generation, costs have to be concentrating on core activities in order to be not very high. The e-learning system should be adaptive and scalable.

### Examples

Based on the results of the observatory project ARIEL, we started this year the new project SIMPEL funded within the EU **eLearning Initiative**. In seminars with managers of SMEs in all project partner countries (Germany, The Netherlands, Hungary, Ireland, Italy) we will build a community of practice for developing business-oriented models of e-learning. The objective of this community is to promote models of good practice and to attract staff who are engaged in support, training, design/development, use, consulting and policy formulation concerning e-learning in SMEs in the European Union, starting with the countries, where SIMPEL partners are active (<http://www.simpel-net.eu>). Access to documents and discussions are supported by a Moodle-based platform because of the accessibility and flexibility of this tool and of the social constructivist approach it is built.

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## LEARNING ENVIRONMENT FOR A NETWORK OF PRACTICE ENTERPRISES SIMULATION ENVIRONMENT TO SUPPORT E-BUSINESS TRAINING IN A PRACTICE ENTERPRISE NETWORK

*Kari Liukkunen, University of Oulu, Jari Viitasalo, Merikoski Vocational Training Centre / FINPEC,  
Kari Pankkonen, University of Oulu, Finland*

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The VEPEN cooperation project between the University of Oulu and Merikoski Vocational Training Centre is developing a practice enterprise simulation for use in business education. The practice enterprise is a method of teaching based on the imitation of real business operations. With the help of their tutors and experts from the world of work, the students design and establish an operating system that imitates a real company in which they can work and solve practically oriented problems in all the functions of a company. The only difference is that there is no physical transport of goods. The Merikoski Vocational Training Centre houses FINPEC, which coordinates national practice enterprise operations in Finland. Some 90 practice enterprises are functioning under its auspices. All the practice enterprises also belong to the international EUROPEN network of practice enterprises. More than 40 countries and in them more than 5500 practice enterprises are currently participating in the network.

The training of entrepreneurs has traditionally shared the problems of traditional school education. In the learning of a complex phenomenon, the student is oriented to its parts and not the whole. Yet it is necessary in small and medium-sized companies in particular to perceive the activities in a comprehensive manner. Teaching and learning need to be developed to serve the skills needed in real business life. When the basis for the practice enterprise simulation was determined, the following principles emerged:

- Authenticity of the simulation
- Forms of modern business activities
- Easy management of practice enterprise operations
- Automation of routine maintenance tasks

In this environment all student activity aims at e-business between the practice enterprises which is essential in future business activities. The environment shall enable business between the enterprises in such a way that the students representing a practice enterprise can advertise the activities of their company, put in tenders for their products and services, and search for information on the other companies' activities and services in the learning environment. For these purposes the system shall provide a trading place where both national and international practice enterprises can do business. Practice enterprise work is about training for the varied tasks of export companies, in which the companies get to trade and advertise their products and services using their company-specific user accounts. The studies take place in an international environment in several foreign languages. In addition to doing business, another essential part of the practice enterprise activities is formed by studies in the management of monetary transactions connected with trading. Therefore a banking system that is as realistic as possible is an essential part of the system to support learning. This has been realised with a banking system that simulates a real bank. This ensures the realism of the studies in monetary transactions, including foreign payments, reminders for claims and company loans, among other things. In addition, the practice enterprise tutor and system administrator cooperate by feeding orders, deliveries, stimuli, business correspondence and various problem situations requiring skills of application into the system. If necessary, the system keeps the company's operations active by issuing orders and carrying out deliveries, and by taking care of the charges for various expenses in the role of the official authorities as per invoicing agreements. Such expenses include rents, leases, phone bills, cleaning, security, advance taxes and insurances.

The simulation environment has been tested by company experts and vocational teachers, and the feedback received has been very positive. In the feedback given by the administrators and teachers, minimisation of the workload and the need for monitoring tools have emerged as essential issues.

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## A HISTORICAL PERSPECTIVE AND LOOK FORWARD AT THE WORLDWIDE INITIATIVE TO FACILITATE AN INTERNATIONAL E-LEARNING PORTAL

*Stephen Gatlin, Gatlin Learning, United States*

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The eLearning Center is a worldwide initiative to create a one-stop shop for the largest and most comprehensive collection of online continuing education programs, where students in Naples, Los Angeles or Beijing can begin learning with a few clicks of a mouse.

A historical perspective of the evolution of eLearning will be covered prior to delving into the industry's future and how its participants can join forces from all corners of the globe to advance one central solution. The eLearning Center houses thousands of the latest, most in-demand and innovative courses available for direct sale to students through portal Web sites. It is the Internet's leading resource of online workforce development courses, containing programs from the country's top online education content providers. Designed to build personal and professional skills, courses are available in a broad range of subject areas including business, medical training, design, IT, motivation and many others.

Gatlin Learning has teamed with hundreds of schools and corporations to produce completely individualized, co-branded sites where Gatlin handles the administrative duties and costs and the partners simply generate revenue. Working with the world's foremost content providers – Element K, NetG, GlobalEnglish, 360 Training, CEU4U and Coastal Training Technologies – Gatlin ensures the most cutting-edge learning material.

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## DISTANCE LEARNING AND INNOVATIVE STUDIES IN CLOTHING AND TEXTILE SECTOR

*Danguole Rutkauskiene, Danute Ambraziene, Eugenija Strazdiene, Kaunas University of Technology, Lithuania*

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### New Challenges for the Universities

Universities are starting to face new challenges. First of all, they will have to **increase quality** of education material and **reduce costs** of training. Meantime, education material needs to become more and more **accessible**. Here informational communicational technologies (ICT) can help to reduce costs and to perfect the conditions of educational service usage. The practice of virtual learning shows that it can reach the same results as traditional studies. Interesting facts were discovered showing that virtual education can inspire students into learning process more than traditional learning practices.

New technologies are making significant effect for the whole education system – education market, as well as, education supply. These technologies have denied the traditional assumptions that studies must be organised at a defined place and for the same age group. Technologies have changed the study administration process, the organisation of student support and knowledge accreditation procedure. These technologies provide the possibilities for the student to control their learning process because student is free to choose the most suitable place, time and speed of studies. Little by little it becomes obvious that the main aim of educational institutions is not to supply knowledge, but to provide learning skills and to educate insightful student. This is the main prerequisite to become competitive in dynamic market. Besides, it becomes very important to know how to use modern technologies, because information nowadays is accessible for everybody, but the winner is the one who knows how to use it.

### Education at the EU Strategic Level

In the April 24 Lisbon conclusions (2000) the European Commission stressed the main points of European Union politics. It confirmed that the European Union is heading towards the age of information, which will have big impact on cultural, economic and social life. The nature of work, study and life itself has changed. The conclusions stressed that life-long learning is the main guarantee to enter successfully the information-based society. For a long time it was thought that young people could accumulate enough knowledge of a concrete subject at school and it will last their entire lives. Modern society rejects this approach. Civilization is advancing so rapidly that a once obtained education does not guarantee a successful career or good standard of living. Working people must now study all their lives, and without taking a break in their careers, they often need to raise or change their qualifications to stay competitive in the labour market.

### Nordic Centre for Innovative Studies and Advanced Training in Textiles

Obviously, for separate universities or colleges, it is difficult to provide high-quality, universal knowledge. The material and methodological bases of each learning institution are oriented to teach subjects of priority. Having in mind these conditions, Kaunas University of Technology initiated the project "Nordic Centre for Innovative Studies and Advanced Training in Textiles". Besides Kaunas University of Technology, Tampere University of Technology (Finland), Riga Technical University (Latvia) and School of Textiles at Boras University (Sweden) participate in this project. The purpose of the project is to create a base of distance learning study modules (two from each participating institution), which would allow the knowledge base of each learning institution participating in the project to be supplemented and enhanced. It is hoped that the teaching materials that have been prepared and knowledge and capabilities that have been provided will create a foundation on which studying people can initiate new and original scientific research and innovative solutions for the clothing and textile sector.

### Acknowledgement



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# INTEGRATING E-LEARNING IN ENTERPRISE INFORMATION SYSTEMS: A STRATEGY FOR EFFECTIVE DEVELOPMENT AND EVALUATION

*Alexandra Zgouva, Aristotle University, Konstantinos Pazalos, University of the Aegean, Greece*

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Recent changes in the ICT sector have undoubtedly redefined the role and structure of contemporary enterprises and have emphasized the necessity of adaptation to the new demands of the Information Society. In this new reality, effective training is identified as a critical success factor and managers recognize that training is a business activity to which computerized system development would be beneficial. Therefore they understand that they must use information systems and digitalized learning processes and services to modernise and enhance traditional training methods. E-learning has the potential to fulfil this need, provided that a proper Information System strategy is implemented. The primary goal of this paper is to recommend a solution to the crucial issue of how to successfully develop an e-learning Information System, i.e. to effectively integrate ICTs with personnel training. The proposed e-learning Information System development consists of several sequenced phases: 1) analysis/planning, 2) designing/building, 3) implementation/integration and 4) evaluation/improvement.

## **Analysis/Planning**

A full and concise requirements analysis of the enterprise, a preliminary and feasibility study must be conducted, through which every aspect of technical, operational, financial and legal feasibility is considered. A project team must be formed to undertake the responsibility. End users and other stakeholders can also participate. An educational needs analysis is the next phase, where the audience's (target group) needs and characteristics are captured. It must also be determined whether e-learning is integrated with working hours or whether it is implemented at home. Furthermore costs and time schedules should be reviewed. Management should be aware of the estimated timetables, the total budget, the available allocation of resources and funds.

## **Designing/Building**

This phase involves the actual detailed design and building of the e-learning application and the decision whether the enterprise implements e-learning internally or externally. System lifecycle, prototyping, end user development, rapid application development, acquisition of off-the-shelf programs/platforms, software reengineering and outsourcing are carefully evaluated. Based on specific educational/ instructional theoretical background, a "blueprint" of the e-learning application is to be formulated, where functions, interfaces, dialogues, file design, site architecture, visual design, communication abilities, activities etc. are designed. Quality in the provided content should also be assured.

## **Implementation/Integration**

During the phase of implementation the final version of the e-learning application is actually tested for its efficiency, appropriateness and compatibility with all the other parts of the IS. The most crucial task is the installation, use and testing process, in order to evaluate the integrated e-learning system and, if necessary, to make the final modifications and improvements. Furthermore all stakeholders should be trained to use the new IS. This phase also requires the employees' entanglement, participation and commitment to the new system.

## **Evaluation/Improvement**

At this final stage the overall efficiency and reliability are measured. Follow-ups, measurements, adjustments, enhancements, and on going adaptation is the main activity of this phase. The interoperability of all parts of the systems is to be thoroughly reviewed. Continuing audits and revisions can certainly help rectify errors. An evaluation methodology, which contains three levels is proposed, in which the trainees, i.e. people who have participated in a training program and used the new e-learning system, evaluate their e-learning experience by filling a questionnaire, which contains questions related to the issues: content, electronic support by the instructor, learning community, technical quality, customization and perceived ease of use.

## **Conclusion**

Building e-learning information systems is a major advantage and can be accomplished with the use of a concrete implementation model. A complete strategy for developing e-learning systems has been presented, one which is based on research and actual applications of ISs in related academic and training programs. It is a multilevel process, that can be influenced and enriched by different factors and can have many alternatives and limitations. Nevertheless, this approach provides a basis on which further research can reveal its usability.

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## SOCIAL SOFTWARE FOR VIRTUAL MOBILITY: AN ONLINE COMMUNITY OF PRACTICE-BASED LEARNERS

*Helen Keegan, University of Salford, UK*

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International internship programmes are now embedded into the mainstream delivery of the majority of HE institutions, offering learners the opportunity to link theory and practice while developing linguistic and intercultural competences. This paper reports on the EU funded Socrates-Minerva ESMOS project, where group blogs are being used to nurture online communities of professional practice in clinical education. The case study presented here demonstrates the benefits of blogging as a learner-centred support tool, connecting geographically dispersed peers in an online community of practice. We are guided by Garrison and Anderson's framework (2003) for the creation of a successful community of inquiry composed of "teachers and students transacting with the specific purpose of facilitating, constructing and validating understanding, and of developing capabilities that will lead to further learning".

A group blog was trialled with BSc Adult Nursing students with the aim of nurturing an online community of practice which would enable geographically dispersed students to discuss and reflect on their placement learning experiences, offering one another feedback and sharing key observations. Alongside the increased educational support, it was hypothesised that the peer-to-peer communication could enhance the social support of international mobility students, who have the additional challenges of homesickness and culture shock alongside increased educational demands of their culturally diverse work-based learning activities.

The preliminary qualitative evaluation has indicated that the student-tutor and student-student (or peer-to-peer) communication via the blogs has been an effective way of enhancing academic, practical, social and psychological support, particularly for those students who travelled abroad for their clinical placement. In terms of academic support, both the students and the tutor felt that blogging was an effective pedagogical technique for relating theory to practice and it also increased the student's interest and ownership of their chosen topic. Data sources were mainly qualitative, involving individual interviews and focus group sessions with the action learning set both during and after the placement. Content was analysed from the emerging themes in the blog posts, particularly focusing on themes of academic, practical, social and psychological support from both students and the tutor.

The online community which was nurtured through the group blog enabled the students to compare and contrast their own experiences with their peers, collectively discovering the best ways of overcoming obstacles and engaging in a collective process of learning from their clinical encounters. Students could read their peers' experiences and realize they were not alone in their problems. This crucial element of student support is vital for all students, but particularly for students who spend time abroad as part of their course. By reading and commenting on one another's blog posts the students could discover that they were not the only ones experiencing difficulties, whether adjusting to living and working in a new country with a different culture or balancing work, studies and their home-based social/family life. In this respect the group blog was found to be an excellent tool for student support.

Over the course of the placement period there was a distinct blurring of the boundaries between tutor support and peer support; in terms of the peer support, one student in particular became an 'accidental facilitator', due to his skills in online communication and also his practice-based competencies. He had a natural tendency to encourage others to reflect and discuss, and was also very active in the blog and highly supportive of the rest of the group.

As students were encouraged to regularly search for and post links to articles and sites they found interesting and relevant, the blog became a kind of collaborative bibliography; students would submit references and links with their own annotations, as alongside their topic-specific knowledge, they would share information and resources that would be useful to others in the group. The blog became a reflective 'space' for the group, who also uploaded their final seminar presentations so that other members of the group could ask questions and provide feedback. As a result of the collaborative bibliography, individual/group reflections and final seminar presentations the blog itself became a rich educational resource for all of the students with the added benefit of social and psychological support. Because this was the first time that a blog had been used as a support tool for clinical placement students their final placement report remained paper-based. The tutor is now exploring the potential of blog-based assessment, while throughout the School of Nursing as a whole blogging is being incorporated into all clinical placement activities.

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# NAVIGATING THE INFOMAZE: INTEGRATING DIGITAL LIBRARY RESOURCES INTO E-LEARNING CONTEXTS

*Non Scantlebury, The Open University Library, UK*

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## **Does the strategic alignment of library resources in online courseware optimise information literacy development within the context of potentially “transformative learning”?**

As we learn within increasingly complex and diverse digital information landscapes and online knowledge spaces, the need to scaffold learning development becomes increasingly important. Over the last decade, Library Staff working at The Open University have built up considerable expertise in developing and delivering learner support and resource collections to course teams and distance learners. The primary distribution channel for these services has been the library website. Keen to innovate with Web 2.0 technologies and the semantic web, the Library has sought partnerships with the Institute of Educational Technology and the Knowledge Media Institute to prototype two very different technology enhanced approaches to support the learner's navigational and information literacy needs at The Open University.

Key aims for both projects are to

- Investigate ways to deliver library resources more strategically within blended learning courseware
- Offer time and cost efficiencies for course developers and learners in locating, retrieving and annotating relevant web based resources
- Evaluate the epistemic impact that this alignment has on learners (What knowledge do I have? How did I obtain this knowledge? Why do I need/not need this knowledge?)

## **Integration of library resources into online courseware via RSS (really simple syndication)**

This project developed an RSS feed aggregator tool to enable the automatic delivery of library content directly into course interfaces using Moodle, the Open University's VLE. The delivery of calendar and activity based feeds are supported via the compilation and ingestion of an OPML (Outline Processor Markup Language) file. User requirements gathering involved face to face interviews with stakeholders, focus groups, scenario building and blogging. This approach negates learners having to seek these specific resources independently within the library website, through an additional interface, and saves them valuable time in completing assessment related activities. It also enables the organisation to make more effective use of its existing library subscriptions for courses.

## **Integration of library resources into online courseware via a semantic web approach**

Annotation of Open University course materials was undertaken by library metadata specialists. Additional records for course material segments were created, along with keywords, to support the searching and retrieval of library related content. The selection and integration of content relevant to courseware themes was undertaken by course teams using annotation terms to target searches in licensed collections. Finally, the presentation of these resources was delivered through an integrated interface.

The semantic web approach adopted relates to the automation of a domain taxonomy used in the selection of appropriate terms for the annotation process. User requirements gathering involved face to face interviews, focus groups and a future technology workshop with elearning practitioners. Outputs include a more granular and richer concept mapping of library resources related to online study material; a cleaner subject browsing environment where licensed expert materials are more strategically surfaced, and finally a learner experience based on a direct connection between learners and their library resources through a single interface at the point of need.

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## SEARCHGUIDE 2.0

*Eva Norling, Peter Giger, Blekinge Institute of Technology Library, Sweden*

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### Background

Blekinge Institute of Technology Library has offered education in information seeking on campus and online and has developed web based tools for this which have received much attention<sup>1</sup>. The Quick Search Guide and The Search Guide are now used in all courses we offer at Blekinge Institute of Technology. The Quick Search Guide contains very basic information about searching and evaluation of sources. The Search Guide is both more extensive and deeper than The Quick Search Guide. But in the light of Web 2.0, The Search Guide's lack of participation seemed outdated, in some respects, so we decided to rework it, and this time we were going to do it based on open source systems.

### From Consultants to Open Source

When we decided to switch from a system tailored by a consulting firm to an open source system, we were confronted by a fairly large set of choices. One important decision was the question of which open source system was to be the base to work on. Another important question was about the community the system was supposed to serve. In our view the community was in focus, but the choice of system was also crucial since its job is to underpin the community.

Our main directives when we looked for a system were that it had to be fairly light weight and based on standards. It was also important that it be based on the most common programming languages and software structures. But the most important aspect was interactivity and communication. One of the main points for switching software was the move from information publishing to communication, and that aspect had to set the stage for what kind of system we choose. Our choice was Wordpress, the largest weblog software in the world. It is a native communication system, and it meets all the requirements we set out.

The Searchguide 2.0 community system comprises two Wordpress installations, a shared library/community of texts and learning objects, and a local customizable end user search guide.

### Agendas

Finally, we want to point to the theoretical/philosophical agendas of the project.

- we want to participate in the open source, open access movements. We think this is an important step for the whole community of learning professionals.
- we want to collaborate around learning objects.
- we also want to raise awareness and knowledge about lightweight, open source, web 2.0 systems.
- in the process we hope to be able to communicate participation strategies which makes us wiser and better equipped for the future.
- let users participate in the creation of content – in the local search guide.
- Communicate library interaction strategies. The majority of the participating organizations will probably be libraries.

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<sup>1</sup> Utvärdering av Sökvägledning, Else Nygren  
[http://www.kb.se/bibsam/bidrag/projbidr/avslutade/2004/sokvagledn\\_rapport.pdf](http://www.kb.se/bibsam/bidrag/projbidr/avslutade/2004/sokvagledn_rapport.pdf)

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## WEB2.TEES: A LIBRARY-DRIVEN PILOT SCHEME TO ADVANCE LEARNING SKILLS AND NEW TECHNOLOGY ACROSS A WHOLE COMMUNITY

*Paul Mayes, University of Teesside Library & Information Services, England*

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University of Teesside Library & Information Services (L&IS) (blog: <http://paulsweb2point0list.blogspot.com/>) has been funded by Aimhigher and MLA North East since 2004 to look at the contribution of libraries to skills. This work has evolved more recently to concentrate on a 'community of development' in the Tees Valley whereby various schools, colleges and community organisations collaborate on enhancing their use of new Web 2.0 learning technologies. More recently the author has become part of the JISC Emerge community of practice.

Our 'community of development' (CoD) approach contains all the benefits of a community of practice (sharing enthusiasms, sharing tacit knowledge, identifying mind-focussing deadlines, etc) but with pre-defined outcomes in terms of materials or skills/knowledge levels and (in our case) real practical skills benefits to the learners taking part in the activities.

L&IS has benefited tremendously from buddying from 'enthusiasts' in the USA and Canada and now facilitates cascaded buddying for other English libraries, schools, etc in turn.

A main early thrust of the project involved developing a standard simple evaluation template for comparing available services (especially for ease-of-use, peer perceptions and commercial sustainability). Other one-off highlights so far in the project include a new scheme (sponsored by the Learning & Skills Council) that financially rewards learners who identify new possible 'cool technologies'. Seven of these finder's fees have been awarded so far. A wiki-producing competition for regional schools has received very good feedback.

The paper includes a map of the organisations taking part and the technologies they have chosen to develop.

Certain technologies (eg Google Docs and Skype) are being used across the partners to aid communication, planning, document storage, etc. Good practice material will be developed for these technologies as well.

The results of the project are being compared with cooperative schemes in The Netherlands and California, USA. We would welcome further collaboration with EDEN participants.

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# TEACHING E-BUSINESS THROUGH AN ONLINE BUSINESS GAME: THE QUEST FOR FLEXIBILITY AND PLAYABILITY

*Alain Ejzyn, Thierry Van Den Berghe, ICHEC, Belgium, Sébastien Genvo, Luc Massou, University Paul-Verlaine Metz, France, Luc Vandennebeele, CRP Henri Tudor, Luxembourg*

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## Presentation of the project

For more than 10 years, ICHEC Brussels Business School have been providing a complete curriculum in Electronic Business and Electronic Commerce (EC). If some of these courses are technology oriented, many of them are more business oriented (strategy, marketing, project management, etc.). In this context, it seems essential to develop a system that emphasizes some specific mechanism of this particular business and increases the awareness of students at an international level. The project "WebTrainingGame" (official website: <http://www.e-musicbusinessgame.com>) is now carried out by several Universities and Research Centres in Europe, with the backing of EU Leonardo da Vinci Program for 3 years (October 2004 – September 2007), with these specific goals:

- to develop a pedagogical tool for learning the fundamentals of e-economy, providing a response to the difficulty to teach E-Business (volatile and changing issues, complexity, combination of several business and technical fields, etc.) ;
- to promote a multi-cultural and multi-users approach based on e-learning platforms and methods (collaborative work, tutorship, and communication tools) ;
- to provide a learner-oriented didactic methodology based on a quality approach and on game design mechanisms.

The game simulates a competitive market of digital products (MP3 music). Its specificities are the following ones: e-economy oriented (digital product, e-customer behaviour, and Internet marketing tools), pedagogical scenarios and comprehensive guidelines for tutor, support of a learning method for understanding e-business, attractive web based user interface and integration with LMS platforms, high flexibility of the game (variable number of teams, various market states, large number of parameters, etc.), and playability.

## Model structure and e-learning dimension

The game consists of two main models: the market model (which simulates a brand-new growing market) and the player model, with an architecture based on the Norton and Kaplan's balanced scorecards which consists of four sub-models (the process, the learning and growth, the customer, and the financial sub-model). The player model transforms the decisions into different aggregated variables (player dimensions) such as attraction, customer satisfaction, etc. Large sets of parameters allow a deep customisation of the market behaviour (growing rate, customer profile, etc.) and of the impact of each decision on the player performance. However, tutors can drive a game without coping with parameterisation. Dynamic modelling is another specificity of the model: it enables a more realistic representation of the business world and its complexity by providing building concepts such as stocks, flows, delays, loops, or business cycles.

Beyond the mathematical model, the project wants to innovate by supporting the learning process during the game. To do so, we have mainly focused on two aspects: the possibility to integrate the software in some SCORM compliant learning management systems (LMS) and a guide to manage the e-tutorship in order to adapt the teaching practices to the use of a virtual learning environment.

## Game design

In order to gain attention and motivation of the users, we found interesting to think about game mechanisms actually used in the video game industry. The first interest is to conceive a software that will be enjoyable to use (having a source of enjoyment during the learning process). The second and main one is to know how to use game mechanisms to ease the acquisition of knowledge and to experiment this knowledge during the use of the game system. We have finally selected three types of game mechanisms that seem to be adaptable to the teaching concepts of our game: creation of obstacles, strategies, and events. These mechanisms are created and controlled by the tutor of the game through the program, with several parameters (identification and description of the mechanism, triggering element, targeted actors, etc...). Playability will be part of the phase of the project's evaluation.

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# HOW GAMING SOFTWARE CAN RE-ENGAGE THE LOST DIGITAL NATIVE

*Euan Mackenzie, 3MRT Ltd, United Kingdom*

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## Introduction

With an increasing alienation of some teenagers, particularly boys, from the learning, study and exam process, is it possible to use game-based learning techniques to help re-engage these 'digital natives'? If so, what type of software will meet the unique challenges of the secondary school environment?

This talk will look at these challenges, our approaches to overcoming them, and the results and conclusions of our trials while implementing our InQuizitor software in UK secondary schools. Our approach has been a commercial endeavour rather than an academic exercise. This has meant that our hypotheses and theories have been implemented through commercial design and product development and then tested in the market place. The results of this process have shown some unexpected results, altering some of our own understandings of the market. The product was designed with two aims; to use gaming as a means of addressing a lack of engagement in study by secondary school students (particularly boys between the ages of 12-15) and to deliver a commercially successful project.

## The Challenge

The major challenge to introducing game-based learning software to teenagers is credibility. For children immersed in a digital culture an 'educational' game will always struggle to present an attractive alternative to mainstream entertainment. The average teenager can spot a 'fake' a mile away. Our previous work with students in secondary schools, over a three-year period, led us to believe that well designed 'professional' games based software could re-engage students and give them the self confidence to approach academic study. However, to do this purely with software we needed to address some fundamental realities about the adoption and use of learning software in schools.

## Approach

We wanted to capture the essence of the video games motivation to enable us to help reluctant learners engage in cross curriculum subjects. To command a child's attention, emphasis needed to be placed on providing compelling game-play. Our development team included some of the world's best game designers. The game engine was developed over a period of 18 months. Using small focus groups of children aged between 11 and 17, even the smallest elements of the interface, music, colour scheme and game play were tested. This iterative process gave us an early indication that the software would be used by students.

## Results

Our primary aim was to re-engage children in study and give them confidence in their ability to remember and learn key information. The immediacy of observational feedback showed that children were learning as they used it. The steady increase in scores recorded in the High Score Tables demonstrated the gradual assimilation of information as the quizzes were played repeatedly. However, some of our hypotheses were brought into question when our observations threw up some unanticipated results particularly around the adoption patterns of the software by different genders and age groups and also around the motivational dynamics of game play. A key result for us was that children were requesting to use the software in class. Yes, children were asking to study! InQuizitor had made studying 'cool' for these kids. Feedback from teaching staff has also been positive. But, as with the children, teachers' reactions and applications of the software in the classroom have thrown up some surprising, exciting and unanticipated innovations.

## Conclusions

Our conclusions are that the right games can motivate children to study, but if you want to build or implement games based learning in schools you need to meet all the challenges the school environment presents. Essentially to build software for digital natives you need to speak 'digital' like the natives.

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## PREPARING BUSINESS GAMES FOR THE INTERNET

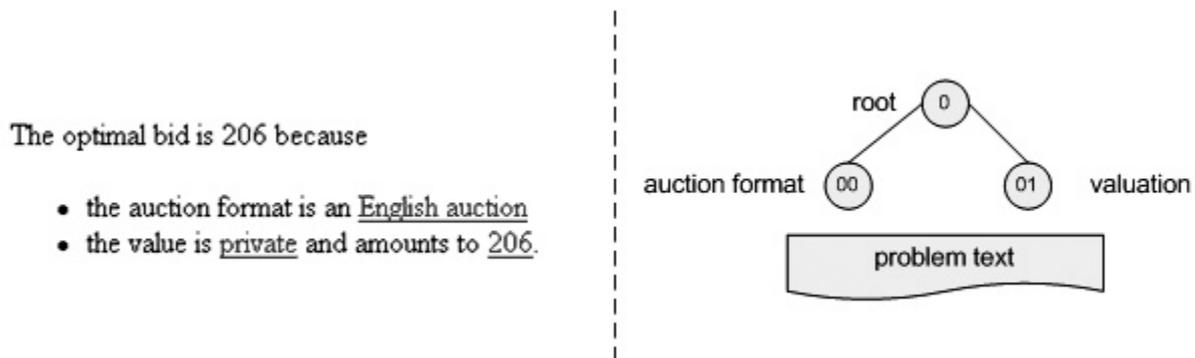
*Martin Fischer, Markus Lusti, University of Basel, Switzerland*

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A business game is a model-based game in which the participants take roles and make decisions. We investigate current Internet business games and conclude that lack of debriefing (i.e. lack of feedback) is their main deficit. Then, we describe three debriefing strategies and discuss ProfiBieter, a demonstration prototype we developed to illustrate computer generated explanations in Internet business games.

There are three means to improve feedback: blended learning, communication technology, and automatic generation of feedback. Automatically generated explanations are immediate, reduce fear of asking and lower teacher workload, but they need a complex software architecture. Our demonstration prototype *ProfiBieter* illustrates the integration of explanations into a business game for auction theory.

ProfiBieter makes its knowledge base transparent and accessible to automatic explanations by explicitly representing the simulation model as a knowledge base of facts and rules. To draw conclusions ProfiBieter uses a forward chaining rule engine. At runtime, the engine applies the facts of the problem to the knowledge base to decide which rules will fire. Thus, each solution path results from a traversal of the facts and rules needed to solve the current problem (see example of Figure 1).



*Figure 1: Representation of the Explanation Tree*

After the rule engine has identified the two rules 'auction format' and 'valuation', the explanation component generates the explanation shown on the left of Figure 1. It builds the trivial knowledge tree on the right of fig. 1 by adding each rule that applies to the facts of the problem text.

If, for example, the player wonders why the optimal bid is 206, the user interface layer generates HTML text to browse through the explanation tree. The user can then navigate through the tree following the familiar hypertext model.

This feedback example shows how ProfiBieter finds an auction strategy. Rule based explanations are in the learner's interest, but other explanations, for example an answer to "Why does my solution *not* work?" remains unanswered. ProfiBieter's explanation component can elucidate the black box of the simulation model (i.e. the correct solution procedures), but it cannot address every question.

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## MOBILE LEARNING EXPLAINED THROUGH MOBILE LEARNING

*Michelle Pieri, Nomadis – Università di Milano Bicocca, Davide Diamantini, Università di Milano Bicocca, Italy*

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This paper is focused on an experience of mobile learning done by the Nomadis Lab. The Nomadis Lab was opened at the University of Milan Bicocca in 2005. It is a multidisciplinary centre focused on research and testing in the field of mobile technology applications.

The Nomadis Lab started a mobile learning experience because of the widespread use of mobile devices, their portability and their cost that has now become accessible for most people. The success of these mobile devices is also connected to their operational flexibility and wide use for non-educational purposes. A handheld computer easily becomes a multimedia display unit to listen to music, look at images and videos, as well as for mobile phone functions. As many experiences confirm, learning through mobile devices can also be fun for users.

Another critical element which can enhance the success of mobile learning is that with this kind of remote training the learning phase is no longer linked to a special space, but it becomes a potentially omnipresent source for learning. For example, delays during commuting and travelling on the underground become possible learning moments. In general, any moment which would otherwise be "wasted" or which in the past could not be enriched with educational contents, has now become a potential learning moment thanks to mobile learning.

With regard to user-friendliness, the instruction manual is not usually necessary in order to learn how to use a mobile device. In less than thirty minutes a new user is able to become familiar with the main functions and software so that he can follow a course autonomously, since most users are already accustomed to using similar devices in everyday life, as with mobile phones.

In light of these elements, in the spring of 2006 the Nomadis Lab designed a mobile learning training course, which included two face to face meetings and a learning unit to be delivered on the PocketPC. In this experience mobile learning was used to explain what mobile learning means to students. With the term mobile learning we refer to the modality of the distribution of almost any educational content, for example: entire traditional courses or new mini-courses, using mobile technologies such as PDA, Table PC, eBook, mobile phones and other portable devices. This experience included three steps:

- step 1: a face to face meeting with the students to introduce and distribute the PocketPC and to administer a pre-questionnaire;
- step 2: delivery of the learning unit;
- step 3: a face to face meeting with the participants to return the PocketPC, to administer a questionnaire which assessed their experience and to discuss their observations about the experience.

The sample is composed of 33 students (6 men and 27 women, between the ages of 22 and 27 (average age = 23.5)), who come from the Social Science Faculty of Milano Bicocca University.

The paper will describe the experience in details.

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## SOSOFT – PROMOTING IDENTITY IN NEW MEDIA

*Carlos Santos, Luís Pedro, Pedro Almeida, António Moreira, Fernando Ramos, University of Aveiro, Portugal*

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### Introduction

The World Wide Web's main objective as a communication service has always been related with sharing and collaborative construction of knowledge. Present Web 2.0 technologically-based communication tools have the power of promoting these objectives, rendering in this sense new forms of learning, communicating and socializing. Communicational implications resulting from the availability and use of these tools in educational and organisational contexts remain, nevertheless, little explored in Portugal. In educational contexts and when correctly explored these tools can foster new forms of interaction among members of a given learning community and, above all, offer different forms of creation, sustainability and development of those same communities.

It is therefore important to evaluate the use of those tools in the creation of formal and informal learning communities and, consequently, to evaluate their impact in the collaborative construction and sharing of knowledge, namely when applied to distance education and professional training scenarios with learner centred pedagogical practices. The process of learning is, especially, grounded on the interests of the students and in their capacity – supported by this new type of tools/services – of becoming collaborative and proactive elements in the various tasks of communal knowledge construction, within the context of the diverse communities of learning in which they participate.

### SoSoft – Goals and Motivations

Derived from the context exposed, the SoSoft project is being conducted at the University of Aveiro (UA) with the collaboration of Portugal Telecom. The project focuses on the implementation and the evaluation of the use of Web 2.0 tools in educational and organizational contexts. In educational contexts the fundamental research objectives of the project are: i) to conceive and implement a knowledge construction platform based on Web 2.0 tools; ii) to evaluate the impact of the use of Web 2.0 tools in different educational contexts (e-Learning 2.0; School 2.0); iii) to inspect the potential of these tools for the study of new methodologies for access to, and representation, of information, resorting to aggregation and tag-clouding tools as a (potential) new way of cooperative construction of concept maps. In organisational contexts, the fundamental research objectives are: i) to promote the creation of knowledge-bases within the institutions through Web 2.0 tools, as well as their dissemination and sharing; ii) to study the construction and sharing of knowledge and the interaction (internal communication) between members of the institutions, made available by the contribution services and by search tools (interests/knowledge/competences); iii) to study and evaluate the contribution of these tools towards the creation of new dynamics of project collaboration and sharing in the construction of knowledge. It is also an objective of the present project to contribute towards the consolidation of a framework of reference in this area of knowledge, by means of the construction of Web 2.0 tools evaluation models in the proposed scenarios or even in other similar ones.

The project activities are still in their early stages. Nevertheless, some experiences have been conducted concerning the use of the referred tools in education contexts: i) the use of some Web 2.0 tools in master and graduate degree subjects by teachers and students; ii) the use of blogs by teachers for disseminating their opinions, links and ideas with others; iii) knowledge sharing and education experiences in Second Life (SL), which lead to the development of a presence for the University of Aveiro in SL (UA is the first Portuguese university developing an island in SL).

We hope that the project results and those of experiments being conducted in some of the courses of the UA with Web 2.0 tools may influence the adoption of these practices in other courses at this university. We also expect that the results and the best practices guide that will be created can reveal the advantages of using these tools to other education institutions, not only of an academic nature, but also in areas such as Distance Education or Professional Training and also at an Institutional level, allowing rethinking the way internal communication is processed.

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# INTERACTIVE EDUCATIONAL TELEVISION: A DIGITAL BRIDGE FOR THE KNOWLEDGE GAP?

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## The Knowledge Gap Hypothesis

The Knowledge Gap Hypothesis is one of the approaches that interprets the digital divide. The main argument is that when the flow of information in a social system increases, this benefits more the citizens with higher education, social and economic status; thus, the increase on the amount of information makes the gap wider between the information rich and the information poor people.

## Interactive Television

Interactive television (ITV) allows interactivity with the broadcasted content and services, such as weather forecasts, athletic, educational and informative programs. Today some European countries have launched interactive television services using cable, satellite and land digital platforms. However, most European countries are still far from this case, especially the countries which lag behind in the digital gap.

## Interactive Television as an Educational Technology

Interactive television (ITV) can be used for the transmission of educational material such as documentaries or courses and in this sense, it can be considered as an educational technology. Examples of interactive television with educational or relevant content already exist. The convergence of Internet and digital television allows for a wide range of applications in e-learning.

## Interactive Television and the Knowledge Gap Hypothesis

Today the Internet is considered the leading educational technology, due to its wide applications in education. However, its limited penetration and lack of content in many countries minimises its role as a factor to fight the knowledge gap globally. Interactive television combines many technological advancements of the Internet with the quality and the popularity of television productions. Although the penetration of conventional TV is near 100% in all the aforementioned European countries, educational TV requires *proper content*. Therefore, *proper strategies and policies* with careful plans and polls are needed before proceeding to investments.

## Reusability of the Educational Material

Since a lot of medium- and small-sized countries in Europe lag behind in the digital divide and lack digital content, it would be desirable to reuse digital educational material in many different applications. Furthermore, due to the European educational convergence (see Bologna resolutions) which is under development, a paneuropean agreement on a commonly accepted format and reusability of educational modules could be achieved.

## Conclusion

Interactive television as a medium is expected to be widespread, allowing almost any member of the Western society to have access to educational services; hence, it may contribute remarkably to the fight against the knowledge gap. Proper strategies and policies are needed in order that Europe could exploit the penetration advantage of TV for the promotion of educational ITV. This way, it might be possible for the EU to create an international educational tool for the masses.

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# THE OPEN EDUCATIONAL RESOURCES NZ PROJECT

*Sue Dark, Richard Wyles, The Open Polytechnic of New Zealand, New Zealand*

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## The challenge of open educational resources

Education institutions worldwide face significant challenges related to providing increased access to learning opportunities, while containing or reducing costs. Meeting a higher and increasingly varied demand for quality education is an important consideration in the policy debate and institutional development in many countries. New Zealand is not alone in these policy debates and the Open Educational Resources NZ (OER NZ) project led by The Open Polytechnic of New Zealand, highlights the challenges and possible future opportunities related to the open educational resources model.

Open Educational Resources (OERs)<sup>1</sup> are digitised materials offered freely and openly for educational institutions to use and re-use for teaching, learning and research. This can take the form of full courses, courseware, content modules, learning objects, collections and journals and be in a wide range of formats including audio, video, text, and images. However, there is often confusion about what defines OERs, stemming from the misconception that there is, or should be, one pure model. The reality is a continuum of "open-ness" often dependent on legal access and re-use rights, business drivers, technical barriers to re-use, quality assurance and context in terms of policy and competitive environment.

## Background information to the project

The OER NZ project is funded by the Tertiary Education Commission in NZ; a National Government Organisation (NGO) for education. The objective of the OER NZ project is to develop a proof of concept for courseware that will be freely available for all tertiary education institutions in New Zealand. The planned project end date is March 2007.

The aims of the project are to provide open courseware resources, which adhere to open content and FOSS principles, including free, open and unlimited access and which measure up to international standards, technically and for re-usable design. The processes and subsequent models for technical and instructional design are to form a model for future collaborative projects.

## What questions does this raise for the tertiary education sector?

The models for development of OERs are questioned. Is it a 'Cathedral' or 'Bazaar' approach? Cathedral refers to a 'highly organized, top down structure that may require paid teams of experts to lead the development', while the bazaar model is when 'basic FOSS architecture and tools are made available to potential OER developers with the expectation that the development will be driven by need and facilitated by support from the emergent community'. Our New Zealand project has somewhat been a mixture of the two.

Should such projects be driven 'centrally' by government bodies or by institutions and the market? Current international trends demonstrate that they are very much institution led. Most initiatives are related more to a desire for positioning in the marketplace rather than the system-wide benefits that may accrue. The OER NZ project aims to provide a proof of concept, which could support either.

Can we achieve a modular, re-usable, pedagogically neutral design? Modular build methodologies tie in with OERs' ethos of allowing end-users (institutions and tutors) to modify materials to fit in with their needs. Our courseware cannot however be described as 'pedagogically-neutral' and this may be cause for further debate. While a learner-centred, constructivist approach dominates the design, learning strategies are explicit, with explanations and rationale provided for future 'facilitators' of the learning experiences.

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<sup>1</sup> The term "Open Educational Resources" (OERs) was first adopted at UNESCO's 2002 Forum on the Impact of Open Courseware for Higher Education in Developing Countries funded by the William and Flora Hewlett Foundation.

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# "WEB 2.0 IN AULA": A TEACHER TRAINING PROJECT AT THE POLITECNICO OF MILAN

*Alberto Colomi, Susanna Sancassani, METID Politecnico di Milano, Italy*

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METID (<http://www.metid.polimi.it>) is the Centre of the Politecnico di Milano founded in 1996 "to provide support for teachers in didactical innovation via the use of computer, multimedia and telecommunications technologies". Today, METID is the University Centre devoted to the development of methodologies and tools for e-learning projects and it is involved in several national and international projects.

## Aim of the project

The project "*Web 2.0 in aula*" (*Web 2.0 in the lecture hall*) has the aim to promote the use of new digital communication and collaboration tools in traditional higher education courses.

## Main activities

To promote innovative collaborative approaches through Web 2.0 tools, METID has developed a strategy, which is summarised in the following key points:

### 1. *Web 2.0 Observatory*

In 2006 a specific group of METID (Side\_lab) has been created for monitoring Web 2.0 trends and identifying tools and applications interesting for the learning context. The main results of these monitoring activities are collaboratively summarized in an Intranet Wiki devoted to case studies in Higher education contexts, and in a public Blog where new tools, experiences or relevant events are reviewed.

### 2. *Test applications*

Before the beginning of the dissemination activities, a set of Web 2.0 tools have been tested in two different situations: an experimental course; local and international collaborative projects inside the Center. Particularly useful as field test, has been the experimental course "Design and development of elearning courses" delivered in the context of the Online Degree in Informatics Engineering and the teamworking support to eLene (elearning Network of Excellence)

### 3. *Dissemination workshops*

The aim of the dissemination activities in the project "*Web 2.0 in aula*" is to make teachers aware of the opportunities offered by Web 2.0 tools. This objective has been reached by a cycle of interactive workshops focused on:

- Web 2.0 tools for the collaborative development of contents (wikis, online spreadsheets, Cmap, online presentations, etc.);
- Web 2.0 tools for sharing and distributing multimedia contents (podcast, video and photo sharing, etc.);
- Web 2.0 tools for organizing the web knowledge (social bookmarking, feeders, etc.).

### 4. *Web 2.0 help desk*

From February 2006 teachers may access an experimental help desk service, provided by METID, that helps teachers interested in the development of Web 2.0 experimentation in the following activities:

- design of the didactical approach;
- selection of the best Web 2.0 tools for each didactical context;
- resolution of technical problems and delivery of the access to the tools for the student;
- monitoring of the results.

## Conclusions

Since the beginning of the project in December 2006, the integrated strategy that coordinates Web 2.0 exploration, dissemination and experimentation has generated a high interest from the Politecnico teachers' community. At the beginning of 2007 a remarkable level of involvement has been shown by teachers involved in attending workshop, in testing new tools and in visiting the Web 2.0 blog. The first analysis of the results of the project has to be done in June 2007 at the conclusion of the first cycle of teacher training workshops and of the first semester of activity of the help desk service. **Related links:** Web 2.0\_Wiki [http://131.175.10.201/mediawiki/index.php/Pagina\\_principale](http://131.175.10.201/mediawiki/index.php/Pagina_principale), Web 2.0\_Blog <http://www.sidelab.com/ins.htm>

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## IMPLEMENTING INNOVATIVE TECHNOLOGIES – REALLY SIMPLE SYNDICATION (RSS) AND ITS POTENTIAL APPLICATION IN ISRAELI HIGHER EDUCATION

*Tami Neuthal, MEITAL & Bar-ILAN University, Israel*

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With E-Learning becoming a mainstream phenomenon in many traditional, campus-based universities, there is a growing need to find ways to enhance the capabilities of existing Learning Content Management Systems (LCMS) with emerging technologies, in order to offer faculty new tools they could employ in the teaching process. There is also a growing need to integrate library instruction into the online learning environment in order to develop the academic information competence of both faculty and students. Today, as libraries become increasingly digital, they offer a constantly growing range of electronic resources and tools which could be integrated into online course websites and contribute to their users' knowledge and research skills. Another challenge for many institutions is the constant conflict between scarcity of funds and support personnel and the need to keep updating and further developing their e-learning toolset. The presentation considers these issues through the prism of integrating Really Simple Syndication (RSS) as a concept and a working tool in an e-learning environment, set in a campus-based university.

RSS (RDF Site Summary, Rich Site Summary, Really Simple Syndication) is a format enabling users to be updated practically in real time of changes in many online information sources, without having to actually visit those websites. Another advantage of RSS feeds is that their format enables a variety of uses. In addition to creating item summary updates for browsers and aggregators, RSS feeds can be automatically processed to update databases (such as library or commercial catalogs), incorporated into existing web pages as a dynamic element (news flashes, announcements from a course web site) and presented in mobile devices. An RSS feed can also be turned into an e-mail message, if the need arises, or incorporated into an "aggregated" feed (a single feed syndicating content from various sources' RSS feeds).

How can RSS be used to enhance online teaching and learning and assist students and faculty in their interaction with each other and with learning materials? The most obvious use of RSS in an educational context is collecting updated information on specific topics from relevant information sources. RSS also enables distributed conversations: posts on blogs, and their attached comments, are syndicated via RSS and read as a threaded conversation in RSS aggregators. RSS can be used to generate updates from a content management system, such as the institutional LCMS. Alerting is a very real need among busy students, many of whom are adult learners combining studies and working life. Monitoring multiple course websites to check for course updates is very time consuming. This is also true for faculty teaching online. They need to be updated about student activity in the courses without having to constantly monitor course websites or query the LCMS. RSS updates from the LCMS can be a most helpful and time saving addition to these users.

This presentation describes an ongoing process of implementing RSS use in Israeli universities, in an e-learning and library use context. Led by MEITAL (the Inter-University Center for e-Learning) and the Bar-e-Learn support center at Bar-Ilan University, this initiative fosters awareness of RSS as an information tool and promotes the use of RSS within course websites and the LCMS system as a whole. The presentation will review the first stages of the implementation process carried out during the last 18 months and describe future planned developments for integrating this new tool within the university environment in general and e-learning in particular.

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## EVALUATION OF LAMS FROM THE PERSPECTIVE OF ACTIVITY SYSTEM TRIANGLE

*Tural Aliyev, University of Oxford, United Kingdom*

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As learning management systems (or LMS) and learning content management systems (LCMS) became popular in higher education institutions, the demand to these systems and specifically to open-source LMS and LCMS raised. The aim of this paper to explore the learning activity management system (or LAMS), which is also an open-source system, through the theoretical perspective of activity theory. The paper therefore gives a brief description of activity theory and later focuses on evaluation of the LAMS from the perspective of activity system triangle specifically the Eight-Step Model of Mwanza. Moreover, it looks at the LAMS not only as an innovative, online web-based tool for creating, designing linear sequences of tasks or a learning workflow but also as a movement which aims to change the *process* of education.

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## SOCIAL SOFTWARE/ WEB 2.0 AND LANGUAGE TEACHER EDUCATION

*Gary Motteram, Susan Brown, University of Manchester, UK*

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The School of Education at the University of Manchester in the UK has been providing teacher training and education courses for pre- and in-service language teachers since the 1960s. As well as maintaining our onsite year-round Master's degrees in Manchester, in the late 1980s we also started offering a Summer School route to a Master's degree. Later we introduced distance and finally in 1996 began the process of putting modules fully online.

We work in a University that has adopted a standard VLE, along with many of its peer institutions, and because of the centralising tendency of current educational policy and the increasingly managerial style that has been adopted in recent years, we are not only encouraged to make use of this VLE for all e-learning, but also as a supplement or even a replacement to face-to-face teaching.

In our own field of language teaching the picture of e-learning practice is much more diverse. The growing field of Computer Assisted Language Learning (CALL) has always been at the forefront of the use of technology in education (early books in the field being published in the early 1980s) and many of the places where our students work simply cannot afford corporate software.

There is an increasing recognition that the advent of social software is going to add a significant dimension to effective communicative practice for language teachers and language learners. As language teacher educators, we also need to address the issue of social computing and in our Master's programme and in December 2005 we set about re-writing one of our modules, delivered to onsite and distance learners, to begin to take account of Web 2.0 developments.

We needed to find a way of embedding these developments into the existing e-learning infrastructure, however, ideally wanted to make use of as many Web 2.0 technologies as possible. Our current compromise is to have the distance students start the module inside the Manchester VLE which has some advantages in that now all of the distance modules are delivered online using a range of typical e-learning formats. We can therefore use the springboard of their experiences of a Web 1.0 VLE as a comparator for the Web 2.0 experience. In addition to the traditional Forum we also make use of Voice communication tools that are embedded in WebCT, but also we make use of Blogs, a Wiki and Moodle. In addition we provide mp3 files with RSS feeds and locally created video clips.

So far, we have concentrated on off-site learners, but what are the implications for students studying a module like this on campus? The onsite students are given opportunities to experiment with a series of social tools and we are expecting that in this year's onsite module that we will reduce the physical contact hours and make use of at least some of the VLE-based materials that we have described above. Certainly the 2006 onsite cohort were very happy to present their projects to their colleagues and this produced some of the most interesting course work we have seen in some time.

We anticipate that over time the use of Web 2.0 will become more prominent within our programmes (we have already introduced folksonomies and the semantic web) and that, through the affordances, as we see them, of Web 2.0 technologies, the students themselves will contribute more and more to the construction of the knowledge base for this and other modules allowing us to continue to further play down our role in the provision of input material.

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## TOWARDS E-LEARNING 2.0: NEW PATHS FOR INFORMAL LEARNING AND LIFELONG LEARNING – AN APPLICATION WITH PERSONAL LEARNING ENVIRONMENTS

*Antonio Calvani, Giovanni Bonaiuti, Antonio Fini, Maria Ranieri, Università di Firenze, Italy*

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In the course of the last two years a new hypothesis on how to understand e-learning has been progressively put forward. In the wake of the "silent revolution" occurred in the Internet and carried out through the so-called Web 2.0 services, which drive users to play an active role of contents production through blog, podcasting, social bookmarking and social networking, some authors have started criticizing more and more persistently the approach to distance learning exclusively based on LMS systems and have started hoping for the spreading of new systems called Personal Learning Environments (PLE), that is environments centred on the person, capable of supporting both informal learning elements, coming from the resources that everyone can find and produce on the Web, and formal ones, based on the settled schemes of the institution and of the "course", effectively "represented" in the net by LMSs.

In the last years the Laboratory of Education Technologies of the University of Florence (Laboratorio di Tecnologie dell'Educazione dell'Università di Firenze – LTE) has organized, overseen and managed various editions of High Education and Masters having involved in all a few hundred people.

The initiative called LTEver started In January 2007. It concerns the constitution of a LTE virtual community joining students and alumni of courses interested in continuing self-training within an online community, in which also collaborators and teachers of the courses themselves, besides the staff, take part. The name itself, playing upon the suffix "ever" (for ever), suggests continuity in time, once courses are ended.

LTEver is based on Elgg (<http://elgg.org>), an Open Source software, stimulatingly called by its authors a "learning landscape", that is a system which, starting from some basic elements such as blog, e-portfolio and social networking, is able to favour reflection, socialization and the creation of a learning community.

It is characterised by an expandable structure, strongly grounded on standards like RSS. It comprises a system of blog management, a file repository and a marked bent for the support and development of social relationships, through the definition of internal communities and the definition of detailed user profiles, usable to "discover" people with the same interests and objectives, and importable and exportable from and to other social networking sites through the FOAF standard.

Today students, alumni, teachers and collaborators of LTE can have their own personal space in Elgg-LTEver for free and they can already use it during the carrying out of their courses as well as after. For instance, the one who has not a blog yet can start building one, while the one who already owns it can easily integrate it using LTEver as an automatic "repeater" of his/her blogs.

The model presented is an example of integration between formal e-learning, informal e-learning and network knowledge management. Even though it maintains a strong "training" connotation, the system lends itself to a wide range of use by users. The challenge for the future of the community will be discovering whether and how a system devoid of a "guide" on behalf of a staff and realized, on the contrary, as a joint network will be able to develop its own way of being and supporting itself during the time and what critical elements it could present. Much will depend obviously on users and on their real will to take part in the network, to share information in a "privileged" place compared to the often conversational occasions offered by the public services of the current Web. It will be necessary to verify whether the "added value" of a community based on the belonging to an institution where people attend courses, but completely free in its expressive and organizational forms, will be perceived. This added value is constituted by information and by the belonging itself: being part of a "world", or better of a "society", made up of people with whom one not only has shared a period of one's own life attending together a class, but from whom one feels that he/she will mutually benefit for the future development of his/her professional and personal life.

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## LIFELONG LEARNING THROUGH 2.0 WEB TECHNOLOGIES: THE COMBINATION OF WEBLOG AND WIKI TO TRAIN TEACHERS IN THE USE OF ICT IN EDUCATION

*Elisabet Higuera, Universitat de Barcelona, Spain*

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This paper presents the case of the course "*Values and ICT in education: practical proposals*" conducted in the Institute of Educational Science of the University of Barcelona from October 2006 to January 2007. This course aimed to introduce primary and high school in-service teachers in the use of ICT for educational purposes, not only as vehicles to work on contents but to promote values in children and youngsters.

To achieve the course goal, a weblog and a wiki were implemented to create a cooperative classroom setting in a blended-learning approach (Carman, 2002). Thus, teacher could experiment by their own what these '*hot technologies*' can offer in education and the implicit values that ICT bring to education (share, respect, etc).

This experience used the weblog for fostering the use of ICT and facilitates the virtual work. Thus, the weblog acted as the introduction and the starting point for all the sessions (including the virtual ones). The weblog was created with the free Blogger tool. The aim of the weblog was to help participants to follow the course and interact about the topics worked in each session, in addition to experiment by their own the use of a weblog integrating its functionalities for education.

To complete this interaction and foster a real collaborative task a wiki was proposed. The aim of the wiki was to create a data base of ICT resources that they could use in their educational task. Furthermore, similar to the implementation of the weblog, teachers could experiment how a wiki works and discover its use for educational purposes. The wiki was created with the free wiki server Wikia Scratchpad and linked to the weblog.

To check how the weblog and the wiki worked, the trainer compiled information about their use by observation and conducting a discussion-group in the last evaluation session (conducted on the 26th of January, 2007). It is interesting to check out how teachers who had difficulties to use the ICT finished the training participating in the weblog and the wiki, furthermore, they proposed as course task educational activities for their job contexts based on ICT that aimed to work explicit or implicitly in values (such as webquest, weblogs, wikis, etc).

For concluding, only point out the effect of using hot technologies for training teachers: these technologies acted as motivational factors to introduce teachers in ICT, and their facilities of use allowed teachers to pass from passive users to active agents of education thorough Web 2.0 technologies, understanding the implicit values that the use of ICT can bring.

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## THE COURSE HUB – AN INFRASTRUCTURE FOR DIGITAL LEARNING RESOURCES FOR WEB 2.0 CONTEXT

*Ulf Sandstrom, Swedish Agency for flexible learning (CFL), Sweden*

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### Background

The vision for having free educational content on the web is moving ahead in new directions. Enter the Web 2.0, a vision of the web in which information is broken up into "microcontent" units that can be distributed over dozens of domains. The "web of documents" has moved into a "web of data". We are no longer just looking to the same old sources for information. Now we're looking to a new set of tools to collect and remix small micro content in new and useful ways. The Web is shifting from being a medium, in which information was transmitted and consumed, into being a platform, in which content was created, shared, remixed, repurposed, and passed along.

### Focus

Focus on in this seminar is the new possibilities concerning content exchange and the benefit in networking in the area digital resources for supporting flexible lifelong learning. Sharing and reuse of digital learning resources are key factors when setting up services and for exchange of content.

The Swedish Agency for flexible learning is networking concerning the exchange of digital learning materials and technics for making internet platforms interoperable between municipalities in Sweden. We also cooperate and exchange metadata and digital learning resources between countries joining the European schoolnet project MELT. Focus is metadata enrichment and exchange of digital learning resources for schools and make federated search in repositories possible. Swedish Agency for flexible learning has set up and is running an open and free internet based repository services called the Course Hub which is a repository for digital learning resources.

The service provides 10 000 digital learning resources, and has 3 000 individual users registered for being a Course hub participant as a teacher, student or a developer.

### **The Course hub: An open content repository free for the use to anyone**

The Course hub contains flexible course material for flexible learning. Key factors for the Course hub development are, searchable learning resources, interoperability between systems, using international standards for metadata, content packaging, collaboration with other hub initiatives, and besides the systems must be easy to use for teachers. The Course hub contains digital resources designed primarily for adult education or students from Upper secondary level of education. Learning resources are stored in a repository and teachers can compose their own material in the Course hub. In the online learning materials which are collected here along with functions as previews, reviews and assignments teachers are welcome to browse the collection or search for material.

When registered as a user, you may add materials, comments and assignments to the Course hub. Usership is free. <http://www.kursnavet.cfl.se>

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## AUTHORING TOOLS FOR E-LEARNING 2.0

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### Authoring tools

An authoring tool (AT) is a software package which developers use to edit and package content deliverable to end users. They are commonly used to create e-learning modules which conform to some international standard, such as SCORM, LOM or IMS. ATs should allow practitioners to develop multimedia contents without the need of programming skills.

Before the appearance of Personal Computers in the 80's, the generation of digital learning content required of great resources of hardware and a remarkable amount of programming. Despite of Personal Computers, the integration of contents was difficult because of the expensive peripherals needed to handle files of great size. CD-ROM devices and local networks made easier the generation and share of multimedia products in the 90's but compatibility between different platforms was still an open issue. The use of distributed multimedia contents really takes off thanks to the popularization of the World Wide Web. As far as the way we interact with Internet is changing, this paper tries to identify the new challenges for ATs in the new web 2.0 environment and the role to play in the so-called elearning 2.0.

### From web 1.0 to elearning 2.0

The term Web 2.0 denotes a perceived second generation of Internet (social networking sites, wikis, communication tools and folksonomies) that emphasizes online collaboration and sharing. There is a breaking up of an Internet made of "web pages" into an Internet made up of small pieces of data, micro-contents, that users can combine or even write by themselves. Web 2.0 can be described as a mix of **new attitudes**, **technologies** and information produce/consumption models or **roles** when accessing and using the web. All of these will also be key ingredients in elearning 2.0.

- New attitudes. Nowadays we *write*, as well as *read*, *small amounts of data* in the web, very *frequently*, from anywhere and for private or public scenarios.
- New technologies. *Micro-contents* are classified through *tags* (which generate spontaneous *folksonomies*) and distributed via *syndication* channels (RSS and ATOM standards). Applications are built as *Web Services* (SOA, Service Oriented Architecture) and take advantage of some programming techniques that improve interactivity (*AJAX*).
- New roles. Internet users can act as information *publishers*, *co-readers and co-writers*, or even as *remote application users*.

### Authoring tools 2.0

In the elearning 2.0 arena the content is not just delivered online, but also shared and created online. Previous ATs have followed a closed model for content generation and distribution ("book model") using the web (1.0) as a fast and rich (audio and video) diffusion channel that overcame the limits of paper. The 2.0 version of ATs should adopt new models for content generation and distribution where Internet is the playground where teachers conceive and develop "learning contents" and the place where these creatures live; they interact with students, with surrounding web resources and with other developers who hopefully could reuse them. These tools should assist the author in collecting valuable resources, editing, integrating and publishing them in order to create rich digital content. These resources could be all kind of multimedia, static and dynamic, contents as well as external services and tools.

A new generation of ATs should have some of the following features in order to cope with Web 2.0: online working, generation of multi-channel multimedia presentations (XHTML, PDF, SVG, FLASH,...), use of specific search services for learning resources, mashup of web services (like google maps, delicious, flickr, youtube,...), use of tagging (folksonomies), coverage of the whole life-cycle of digital contents, syndication, powering of collaborative working, accessibility, internationalization and localization.

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## NEW CONCEPT OF E-LEARNING MANAGEMENT IN EDUCATION

*Eren Kesim, Esmahan Agaoglu, Anadolu University, Turkey*

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### **The Development of New Technologies in Distance Education and e-Learning**

The world is in a rapid process of structural transformation, which takes its roots from the term called new technological paradigm. This popular and multidimensional term is based on information and communication technologies.

All organizations, systems and structures of societies are in transition today. With the gaining speed of technological changes, a new dimension of educational and training paradigm is being formed. This dimension is flexible and rich in learning environments. Anytime, anywhere available high-quality learning environments containing well organized support services are the main expectations of educational systems. Consequently the letter "e" can be added to almost anything such as e-commerce, e-business, e-mail, e-government and e-learning.

When the historical development of new technologies in distance education and e-learning is being analysed, it can be seen clearly that student's role has changed from passive to highly interactive in the learning process. In the 21<sup>st</sup> century, selecting and using the compatible technologies are very important for students' success. Furthermore, technology management is as important as selecting and using compatible technologies. Interactivity and user-friendliness, cost structure of technologies, choosing the best technologies that are supporting teaching and learning, organizational requirements are the main themes that must be analysed carefully in the process of technology management.

### **New Concept of e-Learning: e-Learning 2.0**

New concepts, models and terms in the historical development process of e-learning differ from the old ones. Using of internet technologies including a broad series of solutions, information resources and instruction for creating and delivering a rich learning environment refers to the term of e-learning 1.0. Current trends of web technologies and tools are both in a transition process. e-Learning 2.0 is the popular concept for all organizations. Transition from the traditional view of e-learning to the dimension of technology aiming collaborative nature of learning refers to e-learning 2.0. This new concept of e-learning contains discussion forums, blended learning, virtual classrooms, podcasts, mobile learning, games, blogs, wikis etc. Therefore the main management phases of e-learning such as managing the e-learning content development process, the e-learning environment and evaluation of resources must be taken in hand from the perspective of e-learning 2.0.

In this paper, the development of new technologies in e-learning is being discussed from the historical process of technological development. Also definition of e-learning 1.0 and most important management components are being analysed. Additionally, the new concept of e-learning and management of e-learning 2.0 are taken up with the perspective of those technological trends that will shape the future of knowledge society. Finally the importance and management of e-learning 2.0 are being discussed for the educational organizations and some suggestions are submitted.

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# KNOWLEDGE PROMOTION IN NORWAY: IMPLEMENTATION OF NEW NATIONAL CURRICULUM FOR ALL GRADES INITIALIZING NEW LEARNING BY MEANS OF DIGITAL TOOLS

*Per Storheim, The Norwegian Directorate for Education and Training, Norway*

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## Knowledge promotion in Norway – new national curriculum for all grades

The Norwegian Directorate for Education and Training is developing new national curriculum for the latest Norwegian School Reform called the Knowledge Promotion. The implementation started in August 2006 and will be completed in 2009. The most important changes are:

- Basic skills are defined and to be strengthened:
  - ability to express oneself orally and in writing
  - ability to read
  - ability to do arithmetic
  - ability to make use of information and communication technology
- New Subject Curricula in all subjects, concerning both Primary and Lower Secondary Education and Upper Secondary Education and Training
- New Framework Regulating the Distribution of Periods and Subjects
- Freedom at the local level in the matter of choice of work methods, teaching materials and the organization of classroom instruction

## An Internet data base containing the curriculum and information related to the curriculum

The fact that all subject curricula are based on a common structure has made it possible to create a data base model, which enables publishing the curricula on the Internet in a modelled and structured manner, based on the ISO standard Topic Map, a standard for describing knowledge structures and associating them with information resources. This makes it possible to represent very complex structures, whereas the basic concepts of the model – Topics, Associations and Occurrences (TAO) – are much more easily comprehended.

In addition to the curricula, the data base called *grep* offers information for both administrative purposes, such as framework regulating the distribution of the periods and subjects, pupil assessment and examination provision and regulations, as well as adequate information for teachers, pupils and parents.

The main and crucial idea is that this information is to be found and to be continuously updated in this data base only, being the official source for all systems, public and commercial, as a digital update subscription is offered.

## Digital learning materials on the Internet directly connected to the competence aims

One of the main purposes of the freedom at the local level is to promote the participation of pupils and trainees. The competences described in the competence aims of the subject curricula are expressed in a way that leaves a great number of professional choices to be made at the local level, such as work methods, organization and choice of appropriate and adjusted learning materials. A great number of digital publishers, among them "The Norwegian School Net" run by The Norwegian Directorate for Education and Training, is already about to offer learning resources directly connected to competence aims in the subject curricula. Thus the use of this database will contribute to stimulate the motivation of pupils and trainees, improve learning strategies, using varied and adapted work methods and providing the opportunity to actively cooperate in the learning, given the opportunity to explore by means of this useful digital tool promoting both planning, organizing, administrating, teaching and learning. Most of the subject curricula are planned to be translated into English and the data base model accordingly adjusted to the English versions.

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## E-CITIZENSHIP IN NORWAY – FRAMEWORK FOR DIGITAL COMPETENCE AND PROGRAMME FOR BASIC COMPETENCE IN WORKING LIFE

*Margrethe Marstrøm Svensrud, Vox - National Institute for Adult Learning, Norway*

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The need for raising e-citizenship is an ongoing issue in Norway. The government has made significant progress in providing access to services through online communication. Norwegians have access to a wide range of public information and services online. Lack of ICT skills and knowledge means that people are disadvantaged in their interactions with the government and that this will grow more severe as e-government expands and extends. This does not only concern public services, but also private sector in which a growing number of services are only offered online. People who do not master digital tools might be excluded from these services and marginalized in society.

The infrastructure and access to digital facilities in Norway is good. More than 90% of the population have access to a computer, most with Internet connection. But the challenge remains:

- What do people use their computers for?
- What level of digital competence is required in today's working life?
- What does being digitally competent mean today?

Vox has developed a framework for basic digital competence. The framework describes a person's ability to use ICT tools in order to manage complex tasks, situations and challenges. The main objective of the framework is to increase the quality of teaching and ensure that each individual receives education exactly adapted to his/her needs. In this way every adult can attain the level of basic competence that enables him/her to meet the increased demands of today's work and everyday life.

Recent surveys show that adults in Norway are confident in their own digital competences and therefore not necessarily see the need to update their skills. Nevertheless, authorities and experts believe that adults need to maintain and update their digital skills to be able to meet future demands. Many Norwegian enterprise leaders are not satisfied with the digital skills of their employees. Particularly the 55+ group seems to risk exclusion as new digital systems are introduced in working life.

The Programme for Basic Competence in working life was established by the Norwegian Government in 2006 and gives funding to literacy, numeracy and digital training at the workplace. The purpose of the programme is to provide more adults with the possibility to get the basic competence that is necessary to meet the demands and challenges of changing work environments and social life. The idea is to organise learning activities within the enterprise and that ICT and other basic skills training should be designed in such way that it is relevant for working life.

The total programme funding for 2007 is 35.4 million NOK approximately 4.36 million euros. Of this total 20 million NOK has been given to 70 selected enterprises. More than 200 enterprises submitted project applications totalling more than 78 million NOK. This seems to indicate that the idea of linking basic competence training to the workplace has been received in a very positive way.

Looking for a free tool? ABC pc is an interactive learning tool for training basic ICT skills. You learn how to use mouse and keyboard, how to write text on a computer, you get introduced to the Internet and learn how to send and receive e-mail. ABC pc is made for adults at beginners' level. You can find ABC pc on [www.abccpc.no/english](http://www.abccpc.no/english)

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## E-LEARNING – A DRIVING FORCE FOR AN INNOVATIVE EDUCATION THREE AUSTRIAN BEST PRACTICE EXAMPLES

*Erika Hummer, Helmut Stemmer, Federal Ministry of Education, Austria*

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The new “digital generation” (digital natives, homo zappiens<sup>1</sup>) and the changes and developments in society need new learning and teaching scenarios.

The “eLSa project” forces the implementation of ICT and eLearning in Austrian secondary schools. The – not really – unforeseen, yet beneficial side-effect is that dealing with new methods enhances quality of teaching in class, and not only when working with ICT.

### **The eLSA project**

The project was designed as a pilot project for schools with students between the ages 10-14 in all the nine Austrian provinces in 2002 (<http://elsa.schule.at>).

Today about 65 Austrian Schools (secondary and grammar schools) are participating in the eLSA Project, even if there is no more financial stimulation as there had been in the beginning, however the number of schools is still increasing. Each teacher and each pupil at these schools must have well-defined learning experiences within three years.

### **eLSA and Edumoodle – a central service for schools**

Many of these schools work on edumoodle. The Austrian Ministry of Education offers the possibility of using a „moodle®“-LMS system for schools or training institution with some specialities for free (<http://edumoodle.schule.at/moodle>)

### **eLSA – Benefits for students**

For eLSA students it has become normal to have access to their learning space regardless time or space. The increasing quality of teaching and learning, the variation of didactic sequences and variation in style and scenarios assure them that different learning types are being offered on an individual level. Students furthermore like the idea of opening up their classrooms to a virtual world and interacting with others in different countries or cities.

### **eLSA – Benefits for teachers**

Teachers in eLSA schools learn techniques of getting information, learning and communication as their young students are practicing it outside school and in virtual environments. These teachers know the keys to encouraging, coaching and preparing young people for life long learning.

They encourage school and education development. Even traditional lessons get better when teachers engage in e-learning and were re-confronted with learning and teaching theories. They reconsider their own teaching, curricula, requirements and standards

### **eLSA and e-coaching**

Austrian schools use a trainings system, called eBuddy or eCoaching: Teachers, who are not yet very experienced in using and adopting didactically efficient new technologies (such as computers, internet, video, audio) are getting trained on-the-job by more experienced colleagues. (<http://ecoaching.schule.at/>)

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<sup>1</sup> Veen, Vim; Vrakking, Ben: Homo Zappiens, Growing up in a digital age, Bodmin GB, 2006

## BOLOGNA – A THREAT OR AN OPPORTUNITY?

*Éva Sándor-Kriszt, Tamás Radványi, Budapest Business School, Hungary*

The Budapest Business School (BBS), with its total of about 20 000 students is one of Hungary's largest institutions of higher education (IHEs). As any other European university or college, BBS is facing the challenges of the Bologna process (BP). The Distance Learning (DL) programmes running in BBS have their own problems, which must be dealt with separately.

Although the majority of academics welcome the attempt at the integration of the system of European higher education, some difficulties have undoubtedly arisen during the process of introducing the system. Opponents to the BP claim that the new system is, at best, only partially justified, but mostly unnecessary and superfluous. These views can easily be explained by the general resistance to anything new. It should also be borne in mind that it will not be easy to overcome the resistance, and it will resurface at the earliest opportunity. It is true that the implementation of the BP may hurt various interests – individual, institutional, or even national. Jobs may be lost; departments or schools may have to be closed; the national pride may be hurt by the diminishment of the prestige of some local academic institution. There is also the issue of quality, which must always be maintained when its excellence is threatened by any kind of interference.

We do not want to counter all the arguments against the BP since it has obviously several advantages to offset them. The most obvious benefit of the BP is student and staff mobility – the opportunity given to students and educators to move from one IHE to another all over Europe, and beyond. Mobility today has taken new dimensions by the spread of virtual universities, in which physical or geographical distances have completely disappeared. The comparability of degrees, curricula, examinations, and other academic procedures is another advantage, which can greatly advance the cause of quality assurance in IHEs. Let us see now how all that applies to DL.

It is impossible to give a full picture of how the BL affects DL in Hungary. In a way, however, it is easy to summarise the situation – DL faces the same difficulties that higher education has *in general plus* the specific problems of DL. As it is well known, DL is different from traditional learning in *methodology*. But DL methods themselves are also rapidly changing and developing. "Traditional" DL methodology has given way to newer methods incorporated in e-learning. Even though DL is quite popular in Hungary, education authorities seem to have forgotten about DL. We have a new Act on Higher Education, which covers the problems of the BP and underlines the importance of Life-long Learning but says practically nothing about DL. Nevertheless, we are not pessimistic, and we hope that the government has no intention of discouraging DL. The Hungarian Accreditation Committee has even adopted separate procedures for the accreditation of DL programmes.

In an earlier paper (SÁNDOR-KRISZT RADVÁNYI, 2006), we outlined the problems of the DL programmes, which our school was to address. Briefly, these were the following: 1) insufficient financing, 2) inadequate methodological preparedness, 3) difficulties in cooperating with partners, 4) resistance to innovation, 5) shortage of ICT experts, 6) difficulty in finding target groups, 7) unsatisfactory internet accessibility, and 8) too high expectations. We have managed to tackle some of the problems, and today the situation of DL programmes in the BBS can be drawn up as follows:

<p><b>STRENGTHS</b></p> <ul style="list-style-type: none"> <li>• programmes in demand</li> <li>• students apply in sufficient numbers</li> <li>• fairly good infrastructure</li> </ul>	<p><b>WEAKNESSES</b></p> <ul style="list-style-type: none"> <li>• digitalisation of programmes delayed</li> <li>• limited availability of materials on the internet</li> <li>• few programmes in foreign languages</li> </ul>
<p><b>OPPORTUNITIES</b></p> <ul style="list-style-type: none"> <li>• possibility of launching new programmes</li> <li>• new plans to launch foreign language programmes</li> <li>• increasing international cooperation</li> </ul>	<p><b>THREATS</b></p> <ul style="list-style-type: none"> <li>• diminishing government funding</li> <li>• increasing competition</li> <li>• decreasing influx of students (demographic decline)</li> </ul>

In order to strengthen and enlarge the scope of its DL programmes, BBS will have to

- extend DL to all the three colleges,
- develop and launch new programmes in foreign languages,
- introduce an overall e-learning system,
- establish cooperation with European IHEs with DL programmes.

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# THE CONDITIONS OF RUSSIAN UNIVERSITIES DISTANT LEARNING PROGRAMMES PROMOTIONS TO REGIONS

*Olga Grishina, Russian Plekhanov Academy of Economics, Russia*

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## The purposes of this paper are the following:

- to define the weak points in the application of the distant learning technologies in the educational process;
- to elaborate requirements towards organisation and resource provision of the learning process in the educational institution providing distant learning;
- to control how educational institution complies with legislative acts regulating distant learning technologies (DLT) appliance while providing educational services.

## The weak points in the application of distant learning technologies in the educational process

Distant learning in the Russian Federation has been developing actively since the middle of 1990. After the appropriate amendments were introduced into the RF Law "On education" distant learning in Russian higher schools has entered a new stage in its development. Nowadays distant learning technologies are widely used in universities, in their branches and representative offices.

The number of educational programmes of additional professional education on the basis of distant learning has increased dramatically. The approximate number of students getting education on the basis of distant learning technologies is 0.5-1 million. A sociological survey of 2003 identified the number of potential users of DL as 8 million people.

However the quality of distant learning in higher schools is far less satisfying. In 2002-2005 the Department of Licensing, Attestation and Accreditation of the Ministry of Education of the Russian Federation inspected several higher schools, their branches and representative offices that work on the basis of DL technologies. One of the main aims of this inspection was to check how DL technologies were applied and if they corresponded to the norms and legislative acts regulating the usage of these technologies.

As the result, the following reasons for the poor quality of DL were identified:

- methods of using DLT were broken ( especially concerning the timing of teacher – student relations);
- teachers were poorly prepared;
- the quality of textbooks and other educational materials was poor.

## Requirements towards organisation and resource provision of the learning process in the educational institution providing distant learning

To improve the situation a new registration of all higher school representative offices should be made and their fulfilment of legislative acts, regulating application of distant learning technologies to educational process, should be checked. If e-mail case analyses are used in a higher school the following requirements towards the provision of educational process should be observed:

- Educational and methodical base. For each educational course a complex educational and methodological base should be created;
- Personnel, who are teachers educated for work with distant learning technologies especially for controlling process;
- Students' working place, including computer class (special room for tests and tutorials);
- Communication resources (e-mail);
- The resources of the higher school head office providing the activity of its representative office.

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# INNOVATIVE PEDAGOGIES TO ENHANCE TECHNICAL SKILLS IN ADDRESSING NEEDS OF IMMIGRANT LEARNERS

*Alan Bruce, Universal Learning Systems, Ireland, Kitte Marttinen, Kristiina Kuparinen, Adulta, Finland*

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## Contexts

Immigration is now a permanent feature of the labour market in all European countries. A common issue for all countries is the issue of integration, adaptability and the accommodation of diversity. Ever-increasing ethnic and cultural diversity has created a variety of development needs and challenges for society in Europe, both in the workplace and in educational institutions. A key issue is vocational training for immigrants. A critical factor is the supplementary training for teachers and instructors of vocational subjects to be able to respond to the challenges and opportunities presented by increasing cultural diversity.

An identified key objective is to ensure that all teacher-training providers mainstream best practice in teaching ethnic minorities. The critical issue is how to do this effectively within curriculum centred environments where pressures on teachers' and tutors' time are constant and where traditional delivery modes are not appropriate. A central element is to use distance and blended learning platforms to insert cultural awareness training and competence development for this category of instructor.

## Cultural Awareness in Technical and Industrial Training Project (CATIT)

The CATIT initiative was launched in 2005 under the leadership of Adulta, the Finnish national organization for adult learning, and funded under the EU Leonardo da Vinci program. The general goal of the CATIT initiative is both to improve the quality of vocational education for students of different ethnic backgrounds and develop the professional competence of teachers and trainers in technical and industrial fields with the help of teacher training models dealing with cultural diversity, developed within projects carried out in EU countries. It aims to do this with a mix of innovative distance learning methodologies.

The new supplementary training programme, developed through the project, guides and supports teachers and trainers to deal with and meet the needs of immigrant students in vocational training environments. The training gives teachers and trainers concrete tools and working models for cross-cultural communication as well as practical preparation for working in multi-cultural groups.

The tailored course is designed to enable tutors of specialized technical subjects to use effective tools and methods for the meaningful professional development of immigrants. The project management and course design team are supported by interactive web-base communication structures (Moodle). There is, in addition, a balance between academic and applied expertise among the participating agencies.

Multicultural learning environments are both a challenge and opportunity for advanced technical instruction. CATIT aims to develop new models and methods linked in to innovative tools around communication, on-job learning and multimedia instruction. Vocational trainers are centrally involved as participants using advanced technologies to address issues around intercultural classrooms and learning environments, industry linked to diversity management and conflict resolution models.

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# PROMOTION OF UNIVERSITY COLLABORATION WITH RURAL EDUCATION CENTRES VIA DISTANCE EDUCATION

*Kathleen M. Deery, Dunhill Multi-Education Centre, Ireland*

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## Introduction

There is widespread consensus that e-learning strategies can be used to support education and training in rural and isolated areas of the world. This is especially true in the European Union where there is a growing need for expansion of e-learning modalities to meet the needs of countries in transition as well as allow for a shifting of priorities among developed nations. Even in technologically advanced countries, relevant training does not always reach those in remote regions. Geographic isolation because of distance or difficult terrain presents significant barriers for rural communities in providing high-quality professional development opportunities. Too often what is available is so generic that it has little value for helping learners achieve expected standards of a specific profession. In this regard, educational partnerships can help bridge the gap of unmet need.

While unique in nature, collaboration between universities and rural education centres is not without precedent. Most of these collaborations take the form of extension, using education and training centres in remote regions as a satellite facility for offering programmes of a traditional nature and format. An innovative twist on this relationship is to utilize distance learning modalities to offer a broader array of training programmes to individuals in rural areas, without the need for "on site" university instruction. One such relationship has been forged between Dunhill Multi-Education Centre, a community-based adult learning facility located in rural southeast Ireland and the University of Wisconsin-Stout in the United States. The university assists Dunhill Multi-Education Centre in conducting needs assessments and help to build relevant training programmes using the wide array of skill sets available through university faculty. Through the use of videoconferencing technology and online education platforms (e.g., Blackboard.com; Desire2Learn.com), students are able to participate in training programmes that are unavailable locally due to lack of expertise or opportunity. Installation of videoconference equipment in tandem with broadband Internet access allows Dunhill Multi-Education Centre to connect with university professors in situ.

## Benefits of University Partnering with Rural Education and Training Centres

The benefits of university to community collaboration are myriad. Universities uphold a mission of community outreach and linkage with groups that are underrepresented in traditional educational formats. But institutions of higher education cannot meet the challenge of lifelong learning on their own. Rural training centres gain from the partnerships by increasing capacity. Universities benefit by reaching out to segments of society that have traditionally been marginalised by the higher education sector. This may include members of ethnic and cultural minorities, less well-off social backgrounds, women who have been out of school and workforce while focusing on family commitments, individuals with disabilities, and the large numbers of citizens who left compulsory schooling without qualifications. Through the use of distance learning modalities, all parties – including learners – are able to benefit from expanded training options in a time efficient and cost effective manner.

## Summary

Lifelong learning in an era of advanced technology now requires universities to radically review their structures, modes of functioning, and attitudes. But the challenges of outreach to rural and isolated areas continue, especially in terms of offering a full array of training options to meet the lifelong learning needs of the community seeking inclusion in a knowledge society. Partnerships between universities and rural education centres are a creative mechanism to increase learning opportunities. E-learning technology and distance education modalities allow such partnerships to be formed over extended distances, increasing opportunities for meaningful collaboration that can contribute to sustainable development and social cohesion.

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# LOOKING FOR “EL DORADO” OR HOW TO PROMOTE ICT FOR LEARNING AS KEY TO REGIONAL DEVELOPMENT

*M. Begoña Arenas and Gemma Puertas, Scierter España, Spain, Tania Salandin, Scierter, Italy*

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## EL DORADO approach

There is now more than a ten-year history of European regional planners and policy makers attempting to make use of ICT to enhance the socio-economic development of regions, and to use new and knowledge economy concepts as a basis for regional policy making and implementation. As an example of this, we can find out how the new regional policy agenda all over Europe is largely bound up with understanding and promoting new forms of relationship between the local and the global.

Existing literature also shows the high potential of innovative use of ICT for learning to accompany major regional projects and initiatives to support economic, social and “e-” development, particularly towards achieving a “knowledge society”.

The identification of the potential of the ICT use for learning is also accompanied in many cases by the recognition of the **lack of actual integration of ICT for learning policy and practice into the regional development strategies and initiatives**. This existing gap is due, among other reasons, to the lack of familiarity of regional and local policy makers with the use of ICT for learning; to the fragmentation of responsibilities concerning local/regional development; to the relative isolation of education and training in the overall regional policy agenda and to the lack of awareness and lack of experience of ICT use to support learning by policy-makers and professionals of Regional Development (from now on, RD). In this frame, **ELDORADO aims to measure the integration of ICT & LLL in the regional development plan**.

The main outcome will be the creation of a **European Learning Community for Regional Development Agents and policy-makers, senior officers and persons in charge of RD**, in order to address the main regional focuses, their main leanings needs and familiarize them with the use of ICT for learning, as an approach with a high unexplored potential to accompany the main RD programmes and initiatives.

## Proposed model

Collaborative learning, or grouping and pairing learners for the purpose of achieving a learning goal, has been widely researched and advocated throughout professional literature. “Collaborative learning” refers to an instruction method in which learners at various performance levels work together in small groups toward a common goal. The students are responsible for one another’s learning as well as their own. Thus, the success of one student helps other students to be successful. The shared learning gives students an opportunity to engage in discussion, take responsibility for their own learning, and thus become critical thinkers (Totten, Sills, Digby, & Russ, 1991).

As starting point, a **Regional Development Laboratory** is mapping the current situation in the Regions involved together with the Benchmark Analysis. We are following the concept of development that implicates an “improvement” in the conditions of a certain geographic area attending to the three core elements in which we base the division: environment; socio-cultural conditions and economic implications (Pike, A. Rodriguez-Pose and J. Tomaney, 2006).

These activities will come up with the **Action Plan for the development and implementation of the Learning Opportunities** identified, the necessary knowledge base to implement the Collaborative Learning community by activating the Learning environment and making available the learning resources selected. This will set the basis for the organisation of the Learning Community for Regional Development which will include 2 face to face sessions (1 initial and 1 final) for all RD agents and policy makers/senior staff to train plus the tutors/facilitators and experts in the field; 5 facilitators and 50 Regional Development Agents and policy makers/senior staff trained and an eCollaborative learning environment and Model tested.

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## TELECENTERS AND E-LEARNING – THE “TELEACCESS”-PROJECT

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Teleaccess fosters digital culture among rural citizens by demonstrating ways to bridge the digital divide through advanced broadband telecommunications, e.g. satellite and wireless communications, by providing participation for remote areas with access to the Info-Society. For that purpose existing local establishments are turned into pilot Telecenters functioning as a hub, which equip the local labour force and citizens of all ages with fast Internet access to opportunities for lifelong learning, creativity and development. The professional contents of the Telecenters are based on the needs of the local practice partners, i.e. it becomes primarily those services that increase directly or indirectly the potential of the region.

According to the competences of the responsible partner in Germany, the Media Design Center of the Technische Universität Dresden, the media support for further and continuous education of professionals – the so-called e-learning – has been selected for the specific task of the local Telecenter. Different organisations already offer some e-learning services for their members in addition to conventional offers. But these e-learning services are not especially aimed at the users in rural areas. The problems there seem to be at an individual level, and they are accompanied by the peripheral character of the region. At this point it is appropriate to pick up the idea of the ‘lost meaning of geographical space’ in the digital age: can e-learning, offered by Telecenters, be an effective instrument for the reduction of distance to further training providers? The distance is possibly found by the user as a hindrance and decreases attractiveness and quality of jobs in the rural areas.

There are two influences that are decisively important: the infrastructural equipment and the social feature of the “digital divide”. To overcome these great efforts must be carried out because the delay will make increasingly harder for some social groups to catch up. Education technologies offered in Telecenters could deliver a contribution here into three ways:

- previous “offliners” learn dealing with digital media under sensible prerequisites,
- the appropriated skills and competences increase the training standard and
- have an effect on quality and attractiveness of the jobs in the region and the spatial development of the rural areas.

The group of the employees of pharmacies was elected for the total evaluation, because their associations commit themselves strongly to the field of further education. But e-learning was merely offered in addition to conventional education events by the pharmaceutical professional organizations till now. Therefore, it had to be noticed first, how the previous e-learning offers were perceived. Based on this, an interview series was followed, which aimed to determine the actual need for e-learning. The interviews contained the areas of interest of further education situation, practical computer experience and general ICT-knowledge.

In the context of the Teleaccess-project new ways and possibilities shall be found to establish Telecenters. The Media Design Center has decided to equip a Telecenter with a communication platform for e-learning. Besides the service centre, where the equipment and the services are hosted, three scenarios will be provided for the users: usage of the central Telecenter, usage at work and the usage at home or at mobile workstations.

There will be made an evaluation in the end of the pilot phase in October 2007. The results of the evaluation will show if the intended goals can be reached by establishing Telecenters.

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## A TAILOR MADE E-LEARNING SOLUTION FOR FORD/TURKEY

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The paper tries to describe the basic characteristics of the "Ford e-Learning Project" which has been designed and implemented as a study carried out cooperatively by the F/T and the AU/OEF. After summarizing the evolution story of the process, paper initiates in the analytical, design, production and implementation details of the e-Learning package which aims to create quality training solutions to the corporate academic, organizational and financial problems encountered by the F/T. The *Service Advisors* who are working for the *Sales & Post-Sales Department (S&PsD)* have been targeted for the trainings. The preliminary systemic and the strategic researches led the two sides to decide on the creation of an e-Learning environment which was understood to be the most profound alternative among the open and distance learning possibilities. The effectiveness and efficiency of the existing face-to-face based classroom environments, in parallel to the learning styles and learning needs of the participants, have been analyzed. The outcomes of these studies have driven intentions on the creation of a *tailor-made* multi-media model supported by the uniquely designed materials (texts and audio-visuals) to be integrated into a well-structured Internet based learning infrastructure in which on-line assessments/evaluations, synchronous/asynchronous tutorship and the supplementary logistical services are made available.

Finally, the components have been produced and implemented on the F/T's intranet lines and tested.

The *e-Learning Platform* has been composed of:

- *e-Course* supported by the *e-Television*, *e-Exam*, *e-Moderation/Advice* – to provide active tutorship by transforming classroom environment into a "virtual class";
- *e-Support* – to supply necessary licensed software where needed;
- *e-Book* – by which the printed material support has been given.

The class learning environment is strategically transformed to an *e-Course* in which the tutor is simulated as an "on-the-screen master" supplemented by the other above mentioned compact e-Learning package.

The structure of the specific LMS has been finalized by the design and implementation of the assessment & evaluation mechanism composed of:

- *post-unit tests* – to enable detection of the background skills;
- *active observations at the field* – to ensure the success of learning on the practical skills as well as on the behaviours;
- *final on-line F/T examination* – to assess the overall academic success accredited by the F/T system;
- *Return on Investment (ROI)* – to figure out and evaluate the reflections of the e-learning investment on to the productivity by determining its financial profit.

As for the details of the collaboration: F/T has provided the project with educational content and the raw-texts, the design processes have been held in cooperation with the AU/OEF and the components/materials have been produced by the university to be tested on the F/T's Intranet lines.

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# THE EASTERN FINLAND EDUCATIONAL NETWORK – ACTIVATING SECONDARY EDUCATION TEACHERS TO UTILIZE ICT IN TEACHING AND SHARING EXPERTISE

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## Introduction and Project Description

The current year is the last of a 4-year ESF funded project “Eastern Finland Educational Network 2004-2007”, later referred to as BIGnet project. This project was established to scale up and develop further the well-designed activities constructed in previous small-scale educational projects. The need for larger (more schools and more teachers) regional educational network was very obvious, because many schools were facing a risk of closure due to the negative migration balance and a decreasing birth rate in Eastern Finland. Furthermore, the renewed National Curriculum and changes in the Matriculation Examination increased demand for shared expertise in secondary education in Finland.

The BIGnet project started in 2004 with 36 institutes, and after gradual expansion of activities it has now grown to comprise 72 institutes. In addition to 67 high schools, five institutes providing vocational education are included. The main goals of this project have been 1) to support (small) secondary education institutes in the area, 2) to increase collaboration among eastern Finland secondary education teachers, 3) to provide flexible and high-quality educational services in Eastern Finland, and 4) to support teachers in adapting to a new operational culture.

## Project Activities

In order to be able to provide high-quality online courses in BIGnet, we emphasise *continuous training, shared expertise and quality evaluation*. Educational training has been free of charge for our teachers and has included both short-term and long-term (with credits) training. Topics such as planning an online course, collaboration, assessment and tutoring online, constructing digital learning material, computer mediated communication and copyright matters have been trained. We have annually provided 30 *Online Training Courses* which are normal high school courses for students and simultaneously make a local tutoring teacher familiar with ICT in teaching in an authentic setting (“Learning by Doing”). In addition, the developed *web-based online course delivery, registration, feedback and reporting system and content production model* have served as quality practices in the BIGnet project. All participating schools have been encouraged to offer their online courses through the BIGnet course supply system. These courses cost either 45 or 105 euros per student and the fee is based on the amount of tutoring given. The courses are totally virtual and last either for a few months or for a whole term.

A web-based database, where our teachers can store and collect platform independent digital learning material serves as a forum to share expertise. In addition, we have bought Template Online Courses (Moodle) from participating teachers for shared use. Copyright Agreements have been made so that these Template Online Courses can be freely used and modified for teaching purposes by other teachers in the project.

## Conclusions and Future Plans

Eastern Finland Educational Network has proved to be of essential importance in maintaining a high quality and versatile syllabus school network in Eastern Finland. Clear, realistic and well-designed project plan has made it possible to get excellent results and great regional (and partially also national) impact. It appears that the change to a new operational model at many schools will require several years. Process has taught us the fundamental importance of school principals in encouraging teachers to utilize BIGnet services. Also, visits to schools and personal contacts with teachers have played a remarkable role in achieving our goals. Good examples of digital learning material, as well as individual colleagues showing enthusiasm for online teaching are very important factors in encouraging new teachers to use ICT in teaching. In the future, i.e. 2008 and onward, the project will be continued as contract-based co-operation, where all participating municipalities will pay a fee based on the number of students. All services and quality practices developed during the BIGnet project will be in use, and also R&D actions will continue.

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# THE DISTANCE AND E-LEARNING EXPERIENCE OF NEW BULGARIAN UNIVERSITY IN THE AREA OF HRD

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## Introduction

The paper focuses on a project run by the Institute of Certified Professionals (ICP) – Bulgarian Human Resource Management & Development Association (BHRMDA) and the New Bulgarian University (NBU) – School of Management as a part of Government Communication strategy for 2006 to make popular the Bulgarian and foreign best practices in the area of higher education and qualification.

## Key issues

In Bulgaria, the “weak” points in such educational programs are: mainly the lack of competencies, performance standards in this area, connection with the practice, the very strong academic focus and using only the traditional learning approach – lectures, exams. The MSc program in HRMD of NBU – SM overcomes these problems applying the combination of supported distance and e-learning.

## Key elements of supported distance and e-learning

- Learning materials, audio and video recourses, multimedia
- Professional Standard of BHRMDA
- E-portfolio – academic and work-based
- E-tutor marked assignments
- Workshops and residential school- face to face
- E - self-help groups
- Web-based communications with tutors, facilitators, administrative staff and managers
- E- evaluation and feedback – continuously given
- Practicum “ Connections with organization”
- Integrative written exam
- Master thesis
- Quality system for supported distance and e-learning
- Administrative support from staff, etc.

## E-portfolio

The e-portfolio is a new and very important element of the learning approach. The e-portfolio includes 2 parts – academic and professional one (work-based). The aim of the e-portfolio is to collect the required evidences from the workplace and from the program in order to prove competencies against the Professional standards of BHRMDA and ICP. The e-portfolio is from one side an evidence for the student's activities and progress during the academic program, from the other side – a tool for assessment the professional competencies. As a result of this the students receive not only the formal award from NBU, but also a membership from ICP.

## Conclusion

The MSc program in HRMD of NBU – SM responds to the new realities of the business environment, using the modern technology of supported distance learning and self-development through e-portfolio. For more than five years NBU has been successfully offering that program and most of the key HR managers in different companies in Bulgaria passed through this route which is quite suitable for working people.

The program is the only one in the country accredited by a Professional Body – ICP (BHRMDA).

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## DISTANCE LEARNING IN ROMANIA – CASE STUDY ON UNIVERSITY OF ORADEA RESEARCH REPORT

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This paper investigates the realities of distance learning in Romania, focusing on a particular case: the University of Oradea. We evaluate the level of usage, accessibility and opinions of students regarding the distance learning system applied at our university, in the Romanian context. After a description of the development of distance learning in Romania and Oradea, we present the results of an evaluation research conducted within the Department of Distance Learning in Oradea, research that was based on questionnaires applied to students.

At the University of Oradea a distinct department for Distance Learning was established in 1999, which became stronger every year by developing new programs, training teachers, increasing the number of student, doing its best to fit the needs of students from our region. The courses are taught mostly in the classical system of face to face meetings and evaluation, yet the web site and e-learning platform are improved and added to this system. Students receive paper based or electronic educational materials, courses and other papers. The courses are scheduled in weekends, being offered mostly to people with a busy program. The curriculum is consequently adapted to this learning system and teachers are constantly being trained to be able to include new resources and teaching techniques in the system. Distance Learning Department has developed the on-line teaching platform as well and launched it since 2003. It is currently fully functional for both students registered in the distance learning system as well as traditional learners. This year it has 2.000 registered users. In time, both teachers and students got used to on-line courses and learned to properly use it, a fact that is proved by the high number of registered users.

While policymakers may put faith in curriculum standards and mandated testing to improve educational outcomes, it is the conversations we have and our students have which stand the greatest chance of actually changing our perceptions about each other, about ourselves, and about the world in which we all live. Increasingly, distance learning technologies are being used not merely to access information and content, but to initiate interactive conversations that transcend time and space. As high speed connections to the Internet grow, the potential for these technologies to transform 21st century teaching will accelerate. Students can gain cultural understanding from reading a book but not like they do when interacting with their peers around the world. Distance learning's cultural footprint is expanding, and we hope that we'll have the chance to connect students beyond the walls of a classroom in our country too.

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## THE UNIVERSITY OF EDINBURGH MSc IN E-LEARNING

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Learning, teaching and training are profoundly affected by the challenges of the digital age. The University of Edinburgh MSc in E-learning, launched in September 2006, has been designed to give professionals working in higher or further education or in training and development the practical skills and critical insight they need to become confident within this fast-moving and diverse field. The programme is aimed at all those with an interest in the convergence of learning with digital technologies: teachers, trainers, librarians, outreach workers, researchers, managers, technical developers, learning technologists and educational developers.

The MSc offers a combination of hands-on skills development and the theoretical and conceptual issues that make the field so exciting to study. Depending on which options they choose, students learn how to build courses and learning opportunities using a virtual learning environment, how to build web sites and construct online assessments, how to formulate an institutional strategy for e-learning, and how to nurture online study skills in their own students. They can also investigate a range of intriguing conceptual issues, such as how the digital environment changes the way we construct knowledge, the politics of e-learning and the digital divide, and how video-gaming affects post-school education and training.

We are committed to giving our students opportunities to experiment with a range of technologies, so while each course is based in the virtual learning environment WebCT (with plans for a pilot using Sakai), they also use such technologies as weblogs, wikis, online assessment tools, video games, Second Life, Facebook and chat rooms. Access to the programme is via the University of Edinburgh web portal, MyEd, which is based on the open source uPortal.

The technical requirements of online delivery and the interdisciplinary nature of the field of e-learning made coordinating this programme a particular challenge, both from a teaching and from a technical point of view. The dozen staff involved in course delivery are drawn not only from the School of Education but also from the library and computing sections of the University's Information Services division, and coordinating the technical side has involved working closely with staff from three different units within the University. As one of Britain's oldest universities, Edinburgh has developed along traditional lines, with schools and colleges maintaining a significant degree of independence. Its administrative and support structures are correspondingly complex.

The development of the MSc took place against a background of institutional restructuring, with support services changing name and even location throughout 2006. The University also performed a major upgrade of WebCT (to WebCT Vista) in the summer of 2006, meaning that our main teaching environment was unavailable for final testing until shortly before teaching began. A drive to encourage use of the MyEd portal across the University was almost too successful: in September 2006 it suffered major load-balancing problems after a power outage and reboot, and was unreliable for two to three weeks. Those happened to be the first weeks of our full programme, which dramatically increased the pressure on our staff and students. By keeping students informed at every step, however, we managed to avoid any dropouts, and even to encourage a degree of camaraderie through shared adversity. Our experimentation with a range of Web 2.0 technologies was partly to thank for this.

Beyond the technical side, what matters most in this programme, as in any other, is the educational content and whether students enjoy and benefit from it, and here the feedback from our students has been excellent. Our aim with this MSc has been to offer a range of courses that go beyond the technical skills required of e-learning practitioners and to provide students with the skills to assess its wider educational and social implications. The literature of e-learning has been influenced by a wide range of disciplines: not only information technology and education, but sociology, psychology, political science, cultural studies, economics, management, communication and more. E-learning practitioners need some familiarity with and understanding of all of these fields, and our MSc aims to give them this while exposing them to the technological developments that will shape the teaching and learning of tomorrow.

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## IMPROVING THE EFFICIENCY IN THE UNIVERSITY EXAMINATION WITH RFID TECHNOLOGY

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In the present paper a research is described, which was done in an Open University to improve the examination process in several stages, comparing the traditional system with two more advanced methods. As a consequence of this work a system has been created to control the entrance and exit of students to and out of an examination room, using in the first stage bar codes to identify the students and in the second stage RFID technologies.

Traditionally, the process of examination in UNED implied that the teacher had the responsibility for preparing and photocopying the exam forms, and finally introducing them into envelopes. Then several secretaries classified them by faculties and introduced them into the packets that were sent to every examination centre using transport agencies. Once the exam forms were there, they were again reclassified by the examination court.

The new system has simplified all these processes, improving and securing it with guarantees. The new process consists of a digitalized copy of the exam form introduced in a CD with the suitable identification data. The CD and security key is given to the examination court that will transport it to the examination place. The student is identified using an optical sensor that reads the bar code in his student card. A fast laser printer will give a copy of the exam to the student, indicating the student's name, signature, the designated site for him and the day and hour of entrance to the examination room. The system will register the delivery of the exam form and will elaborate the acts of the entire process.

Although, the use of bar codes technology to control the access to the examination room improves considerably the speed of entrance of students, it is not enough to satisfy the requirements, because it is necessary on one hand to control not only the entrance but the exit as well, on the other hand to satisfy the requirement of introducing 2000 students in 30 minutes in the classroom, printing the exam forms and finding the most suitable place to the student. For that reason the next step in the improving of the examination is the research done in the control of the accesses to the examination classrooms using RFID (Radio Frequency Identification) technologies.

In our case, the student who goes to a classroom to take an examination is identified when he enters a zone with readers of long reach thanks to the RFID chip incorporated in his student card. Once the student is located and identified, the RFID readers send the user's ID to a server, which will be able to print his personalized exam form in a pool of fast laser printers. The user will gather his exam form and he will see which chair has been indicated for him. In general, the main characteristics of the system are:

- An examination room that is able to receive a high throughput of students simultaneously;
- Students do not have to wait for a long time to enter the examination room;
- It controls the exit of all students. Thanks to this, we will know if a student tries to leave the class without handing in his exam form;
- It allows printing a customized exam in real time.

The RFID tags give a very good solution to the examination problem due to its characteristics: robustness, speed of reading, simultaneous reading, security, existing programmable tags and it does not need direct line of vision.

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# A COMPUTATIONAL MECHANISM FOR ASSESSING THE COST EFFECTIVENESS OF WEB SUPPORTED ACADEMIC INSTRUCTION

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Higher education has begun to realize technology's potential to enhance the teaching and learning process, improve the quality of student learning, increase access to, and control of instruction as well as reduce its costs. But as these technologies become more frequently implemented in new and varied modes, and as a part of existing teaching frameworks, the need for explicit assessment of their cost effectiveness becomes a major issue.

The paper presents a computational mechanism for assessing the cost effectiveness of Web-supported academic instruction developed during a long-term study. Its target is to develop a validated quantitative cost-effectiveness model of Web-supported academic instruction and blended learning. The model development is based on the theoretical and experimental literature in the fields of instruction and learning in technology environments, and on cost effectiveness of the online learning in open universities, virtual universities and traditional universities. The model validation is conducted in three stages: by the theoretical and experimental literature, by experts in Web-based academic instruction and instructors.

## The cost effectiveness model description

The cost effectiveness model for Web-supported academic instruction presented in this paper is based on the insight that there is no one main benefit from integrating the Internet in education but many benefits in different dimensions. The model consists of: (a) a cost effectiveness framework that defines cost and benefit components of Web-supported academic instruction and (b) a computational mechanism that provides a quantitative translation of the cost effectiveness components into quantitative values. Therefore, a different measure will be developed for each of the cost and benefit components, enabling its calculation and quantification in relation to each of the three main actors involved in the learning instruction process: students, instructors, and the academic institution policymakers.

The model is designed primarily for assessing web-supported academic instruction cost effectiveness (rather than distance learning only). It is nurtured by empirical data taking from web-logs (using web-mining techniques) regarding students' and instructors' usage. It provides quantitative analysis of the pedagogical benefits resulting from Internet use. It provides a quantitative description of the main cost effectiveness components of Web-supported academic instruction for students, instructors and the academic institution policymakers. Finally, it will enable to calculate the costs and benefits of web-supported instruction on both the single course level and the campus-wide level.

The model includes cost components related to infrastructure and instruction (23 components), and benefit components related to improving instruction quality, improving affective aspects, increasing efficiency of teaching and learning processes, and facilitating knowledge management (44 components). The focus of cost and benefit analyses will change according to users' institutes and courses.

A computational mechanism was developed in order to translate the cost and benefit component of the model (67 components) into quantitative values. For each one of the cost and benefit components, computational functions ( $Y=f(X)*M$ ) are defined. These functions calculate quantitative values for each of the three main actors involved in the learning process: students, instructors, and the academic institution's policymakers. The indicators ( $X=\{x1...x93\}$ ) are independent variables that characterise the course, the Web-based teaching processes and their usage by students. The cost effectiveness parameters ( $M=\{m1...m82\}$ ) translate the costs or benefits derived from the independent variables into a quantitative measure in terms of "coins" on a cost effectiveness scale derived from different categories according to the model dimensions. "Efficiency coins", are the result of saving time and money; "quality coins" indicate rise in the quality of instruction and learning, and "affective coins" represent the creation of satisfaction, prestige and motivation. Anyone who uses the model can define these parameters for each measurement of the model components according to case-sensitive predisposition.

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## WEAK POINTS IN E-LEARNING PRACTICE

*Sarolta Zárda, Géza Bognár, Dennis Gabor College, Hungary*

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### Implementation of ILIAS system at Dennis Gabor College

After a two-year test period a full scale e-learning system was introduced at our school, dealing with distance education all over Hungary and in three neighbouring countries since 1992. About 8700 students are enrolled in the system now, 3100 of whom are regular users. Headquarter of the system (professorial body, hardware and software components, operation team) is settled at our Budapest campus. BSc level IT education is assured by electronic means.

### Analysis of technical components

The main software component of our system is the ILIAS learning content management system twined with ETR administration system. When the number of parallel users is more than 200, the answer time may be increased considerably (about 5 seconds). But except of very short peak periods it does not yield to serious problems. We found that the open source ILIAS system can provide almost all necessary functions of an expensive not-free system. Obviously there is no hotline help service with this system, but operators having enough experiences with running of other similar systems may accede to necessary help information on specialised forums. In respect of hardware a high reliability server park is used since more than two years without any major breakdowns. According to our experience the content hosting and the forum facilities are the most used software components. The current organization structure of the ILIAS needs a strict moderation policy, other ways a chaotic situation may be developed on the forum.

### Analysis of human components

Two types of staff members are in direct contact with the students: tutors and mentors. First are those, who are assuring professional consultancy within a very special topic. Second are those who are dealing with general problems, having good knowledge in administration rules of our school. Both type of personnel is selected from our full time staff, having good skills in IT and distance education. However some resistance was shoved against the wide use of e-learning facilities. That is one of the reasons of using blended learning instead of full electronic learning. Highly skilled staff members at the headquarter of our school accept more and more the electronic education technology, while local professors at our regional centres are still resisting. The simple reason is their fearing for loss of their job, if more centralised teaching technology is applied at our school.

### Introduction of new technology components

In the past two years two internet free telephoning systems namely MSN and Skype appeared and conquered the world. Next to our off-line forum we propose on-line MSN conference for our students according to a regular time schedule. It means that the tutor is logged in MSN and follows the professional chatting on the forum, while critical cases are dealt by telephone or video calling. Due to technical limits of the free telephoning facilities, it is very difficult to follow multiple calls, but combined with using forum chatting a very efficient and cheap tool is obtained.

### Conclusions

- The same technical characteristics may be attained by the ILIAS open source LCMS system, as with other not-free software.
- A severe moderating policy shall be applied to forums, which shall be grouped in three main classes. Outgoing messages are subject to strict moderation.
- Audio and video conferencing facilities are suggested to be used with the existing LCMS.

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## THE RAISING AWARENESS OF THE NECESSITY OF IMPROVING LEARNING SKILLS TO ENHANCE READINESS TO LEARN

*Judit Vidékiné-Reményi, Budapest University of Technology and Economics, Hungary*

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Since lifelong learning is not an optional pursuit for any of us anymore but an inevitable necessity to become successful and competent citizens in our knowledge-based world, learning – should it come in any form – should not just be for the elite or for those who can afford it. The word afford is used in a broader meaning here referring to all those people who do not have to worry *for any reasons* about participating in learning.

In any form of distance learning and e-learning the learners (are supposed to) take control of their own learning. The lack of appropriate monitoring tools and consequently the lack of information about the self-regulated learning process and the learner's necessary learning skills or lack might result in dropout, superficial learning, slight knowledge, and losing interest in learning.

Six years' experience as a language tutor (English modules of the Postgraduate course for 'Environmental Protection Advisers') has led author to realize the importance of raising the learners' awareness of the necessity of improving their (language) learning skills. In spite of the relative success of the English modules (rate of completers varying between 60% and 100% in the first module, or respectively varying between 80% and 100% in the second module), knowing that completing the language modules via the least possible effort before the deadlines of the TMAs and never reflecting on the learning process and the achievement will never result in the mastery of the language, it seems essential to initiate 'tools' to make learners focus on and conscious of the language learning process. This is essential even in case of blended learning environments as well, as most of the students would need more opportunities of improving their independent language learning skills than those of the tutorials. (Learning skills training is not yet an organic part of the Hungarian educational culture.)

As it is critical to change 'the good old one fits to all' learning style, the solution is to introduce the preparation of a personal development plan and the keeping of a learning diary to be submitted with the TMAs. This way the tutor will be able to follow each student's progress and give tailor-made study advice if necessary. The objectives of the change are: to encourage learners to develop a more self-directed approach to study, to reflect on their actions, to detect and learn from their errors, to use learning strategies in a planned and controlled way.

Swift progress is not likely, conflicts can be expected. Culture shift does not occur overnight, as the roots of learning are established during childhood. This will be just the first step of making learning personally more rewarding and efficient.

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## THE INTER-UNIVERSITY STUDY IN THE NETWORK OF SELECTED UNIVERSITIES

*Petra Poullová, Miloslava Černá, University of Hradec Králové, Jan Hán, University of West Bohemia, Bedřich Zimola, Tomas Baťa University in Zlín, Czech Republic*

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### Virtual Mobility

Modern term Virtual Mobility represents the use of information and communication technologies to obtain the same benefits as one would have with physical mobility but without the need to travel. These are several examples of Virtual Mobility projects in the European area – VENUS – Virtual and E-mobility for Networking Universities in Society, EVICAB – European Virtual Campus for Biomedical Engineering, REVE – Real Virtual Erasmus, ...).

### Project RIUS

Since the academic year 2005/06 University of West Bohemia in Plzen, Faculty of Informatics and Management in Hradec Králové and Faculty of Management and Economics from Tomas Bata University in Zlín have participated in the project RIUS (Initiation of the Inter-university Study in the Network of Selected Universities in the Czech Republic). The project belongs to those which are supported from European social funds. The main objective of the RIUS project is to build a substructure of the network of selected universities in the Czech Republic and this way to enable creation of working virtual inter-university space where blended and distance form of study could be run via eLearning. This network is supposed to be connected to similar networks in the countries of the European Union.

### The First Experience

Project RIUS enables students from Faculty of Informatics and Management, University of Hradec Králové, Faculty of Management and Economics, Tomas Bata University in Zlín and faculties at University of West Bohemia in Plzen study subjects supported by eLearning at the partner universities.

Information on subjects offered within the programme of interuniversity-study can be found in catalogues of subjects and in the information system of study agenda of their parent university. If a student is interested in some of the "outside" subject s/he will register it into her/his study plan in a common procedure, so the subject will be recorded in a student's study register. Inter-university study was run in a distance way. Only opening meetings to particular subjects and final exams were held in a traditional manner at "mother" universities of enrolled students. All subjects were, are and will be supported by tutored eLearning courses.

At the end of the semester when the subject is finished the tutor informs the study department of students' "mother" universities on their achievements. The study departments are responsible for writing these results into study records of participating students who successfully completed the subject. The students are granted the reached credits (ECTS).

### Conclusion

In the winter semester 2005/06 students chose, enrolled and completed 17 e-subjects in partner universities via the Internet. University of West Bohemia guaranteed six e-subjects, University of Hradec Králové tutored students in seven e-subjects and last but not least there is Tomas Bata University with four e-courses. In the summer semester number of e-subjects notably increased, students studied in 25 e-subjects. University of Hradec Králové guaranteed 7 e-subjects, Tomas Bata University 8 e-subjects and the University of West Bohemia 9 e-subjects and 560 students participated in virtual mobility in the academic year 2005/06.

The project prosperously goes on in this academic year 2006/07, over 400 students got registered into 23 e-subjects in the winter semester.

Experience gained in the national RIUS project is fully utilized in an international context in the EVENE project that is focused on virtual study mobility in the environment of economic faculties of European universities. The EVENE project is backed up by the eLearning programme.

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## EUROPEAN VIRTUAL N2L UNIVERSITY (EVNU) EDUCATIONAL EXCHANGE IN NANO2LIFE – A NETWORK OF EXCELLENCE

*Rafi Nachmias, Moshe Leiba and Judith Ram, Tel Aviv University, Israel*

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European Virtual Nano2Life University (EVNU) is a digital Learning Objects (LOs) repository designed for institutes/universities participating in Nano2Life (N2L), Network of Excellence (NoE) in nanobiotechnology, supported by the European 6th Framework Programme. Founded in 2004, N2L comprises 23 major European organizations, including Tel Aviv University.

Learning Object (LO) can be defined as “any digital resource that can be reused to support learning” (Wiley, 2000). The purpose of a digital repository is to store, categorize and cluster the LOs and mainly to share and reuse them (Duncan, 2003). The metadata describing the LO is crucial to its reuse as it is only through the metadata that a LO can be located. In recent trends, large repositories are dedicating themselves to making LOs from all disciplines (e.g. MERLOT, CAREO, and Wisc-online). Although this tactic offers greater access and availability, they are not always easily navigated, nor is there a uniform system for classifying them (Nash, 2005).

EVNU – The European Virtual N2L University is one of the key tasks in N2L's educational programme and serves as N2L's Educational Repository, offering LOs on various innovative subjects in nanobiotechnology. The EVNU initiative aims to facilitate a knowledge building community involved in constructing a knowledge repository through the process of contributing LOs in a Web-based learning environment. Its specific aims are to: (1) promote a knowledge building community to be a joint venture among nanobiotechnology researchers and e-learning experts, (2) enhance knowledge sharing within N2L network and (3) facilitate the diffusion of knowledge primarily among researchers and students of higher education in the field of Nanobiotechnology.

EVNU is still in its Demo phase and its LOs are temporarily organized according to three main disciplines: Engineering, Biology and Chemistry. EVNU's current LOs were created to be used in a variety of educational settings, stored in a user friendly web-supported Course Management System (*Moodle*). Each LO is annotated and tagged with metadata in order to meet the academic needs of its users and to enable the selection of search criteria. The main purpose of the Demo was to illuminate and clarify key issues to be discussed in the crystallization process of the concept of EVNU.

There are different roles involved in the knowledge building community that EVNU supports (Duncan, 2003):

1. *Contributor*: Researchers/Instructors from N2L network who are interested in contributing to EVNU LOs in their unique area of research and expertise.
2. *Borrowers*: Instructors from N2L network who are interested in using EVNU's LOs in their academic instruction.
3. *Casual User*: Students of participating Institute/University in N2L network.

The first EVNU workshop was held in Tel Aviv on January 29-30, 2007. Thirteen N2L members jointly generated the concept of EVNU and discussed key issues in the development and the dissemination process of EVNU, and the role it may play in the promotion of knowledge sharing across the N2L network. The main ideas and issues discussed will be presented at the conference.

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## DISABLED AND FIRST GENERATION STUDENT TEACHERS: SUPPORT AND GUIDANCE OFFERED – AN ACTION LEARNING PROJECT

*Karin Orving, Ulla Andersson, Mid Sweden University, Sweden*

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The policy of Distance Education (DE) at Mid Sweden University is to provide flexibility in lecturing and learning. Flexibility in studies is defined as having the possibility to decide where, when and how you want to organise your studies. The University has experience of so called "flexible learning" with modern technological support that facilitates the interaction between students and students and between students and lecturers. Important components in the teacher education programme are the study guide and the continuous interaction with assistance of technology.

One high-priority objective of the Government's education policy is to achieve greater equality in recruitment to Higher Education (HE) (Government Bill 2001/02:15, Reforms in higher education – a more open system, Government Bill 2004/05:162 New world – new University). Educational thinking needs to adopt a more holistic approach to planning, recruitment, introduction to higher studies, learning activities, and student assessment. Widening participation as social justice is a mission and is an essential feature of HE in Sweden, and accordingly a great variety of beginners have admission to HE. An example is teacher education at Mid Sweden University where 80% are distance students, and the majority of them are adults with vocational backgrounds.

The aim of the two-year project was partly to offer support to those students who have recently been admitted to teacher education, and who for various reasons needed help to get started with university studies to become successful learners; and partly to direct the attention of lecturers to the need for information and development of courses and study guidance in order to be able to meet the needs of the diversity of students. Target groups of the project were: disabled students, students unfamiliar with academic studies and students as mentors for disabled students. As most of the recently admitted students were distance students, it was necessary to organize information and guidance through the use of Information Communication Technology (ICT). The undergraduates were offered a net-based study workshop, supported by an E-conference program called Marratech. The greatest challenge was not to develop good pedagogical assistance but more the question of how to reach students who needed support so that they could take the first step and join the activities. The work with the project was thus a matter of developing ways to invite and reach those students who needed support and to create good activities.

The evaluation was qualitative and summative. In another way it was formative as the experiences highlighted some key issues which will be important to consider in further development. A gap was observed between students' and lecturers' experiences in the matter of literacy. It is a challenge for a beginner to show one's weaknesses and to ask for support as a beginner in the teacher education. It is demanding to break through concealed behaviour, which means that as a pupil in earlier studies you would have to try not to show any weaknesses. When entering HE these literacy weaknesses cannot be concealed any longer. It is also important to increase the undergraduates' awareness to become familiar with the academy. Another issue is to manage to consider the integration of beginners, especially students unfamiliar with academic studies. To review the structure, the pedagogy and the content of HE with the view of social justice is another urgent aspect of the evaluation.

An overall conclusion is that preparations for higher education should have to start early, in primary school, and be a natural element in the curriculum.

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## A VIRTUAL ENVIRONMENT OF FORMATION ON POLICIES OF GENDER EQUALITY: AN APPROACH FROM LET ME LEARN® SYSTEM

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We explain the use of the Let Me Learn® learning system for the design, implementation and management of a virtual environment of formation on policies of gender equality for the city council of Tarragona, Spain.

Nowadays, government institutions have an important challenge facing the establishment of policies of equality between men and women. City council staff has a big necessity of being well informed and prepared on gender equality issues, because they are in charge of responding the doubts and requirements of people who live in their region. We should keep in mind that staff from the government institutions is formed by adults in professional activity and they require an adequate formation system that allows them an individual development.

We have chosen the Let Me Learn® learning system as a methodological support to establish a collaborative work, under the frame of lifelong learning, between the staff of Tarragona city council and the research group of Rovira and Virgili University.

### **Why do we need a virtual environment for formation on Gender Equality?**

People who need formation on gender equality policies come from different working areas inside the Tarragona city council and they do not share the same physical place and time. Besides, the research group from the university, who gives them academic and scientific support, is also located in another distant place and have different working schedules. A virtual environment is presented as an ideal resource to determine communication and management guidelines to ease the main objective of the formative process: to develop the equality gender plan for Tarragona city council.

### **Why Let Me Learn® system?**

Let Me Learn® is an advanced life long learning system created by Christine Johnston and Gary Dainton from Rowan University in USA. It eases the individual and team work. It has been used successfully for more than 40.000 people around the world during eleven years. It consists on knowing with intention, through a validation instrument called Learning Connections Inventory (LCI), the special combination of learning patterns that each person has. According to Let Me Learn®, we use, in different ways, four learning patterns: sequence, precision, technical reasoning and confluence. If we know how we learn, we can establish individual and team work strategies to help us have a better understanding of ourselves and our colleagues. Speaking about the virtual environment, in reference of content organisation, resource distribution, dynamizing, communication, participation, etc, and the fact that we know the learning patterns of the group provides the design of a personalized methodology adequate to the particular requirements.

### **Conclusions**

Moodle was chosen as the technical platform. It is the virtual learning environment officially used by Rovira and Virgili University.

The results obtained using Let Me Learn®, have been satisfactory. In the same way, the positive reaction to the formation, communication and management strategies developed between the research group and the city council staff.

The virtual environment will be used as the main tool for the design of the equality gender plan for Tarragona city council and at the same time it will be a public window to promote equality gender policies through Internet.

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# BEYOND LEARNING MANAGEMENT SYSTEMS IN HIGHER EDUCATION: WEB SERVICES AND SOA

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## **New requirements seek new technologies and vice versa**

The number of software systems for managing e-learning is still rising and the functionality in order to meet more and more requirements is expanding. A few selected requirements in higher education show that new technologies are necessary.

The number of new, popular, and very specific tools like wikis, blogs and e-portfolios seems to be endless and the integration of all these tools into a learning management system (LMS) becomes a nightmare. Many students and teachers need to work with one tool, but often have to work with more than one LMS, because large organisations have several LMS or universities have teaching co-operations with others. Non-formal learning is generally not yet supported by the existing LMS. Blended learning scenarios which are a mixture of e-learning and presence teaching should be better supported by LMS. Interoperability of campus management systems and LMS in universities is required because of the new challenges of the Bologna process in Europe.

## **Approaches to a new e-learning environment**

New technologies can be integrated in existing LMS in order to provide the latest and most favourite tools. But the monolithic LMS is no longer able to keep pace with the requirements described previously.

A second approach to a new e-learning environment is to concentrate more on interoperability between LMS and the new technologies using web services. Many of the web applications "talk" loosely to each other. An example of web services are RSS-feeds which are embedded in a web page. Another possible service is that courses which are announced through the campus management system can be transferred to an LMS, and the registrations of students to a course can also be communicated from the campus management system to the LMS. Web services are very flexible and are able to meet individual and personal requirements. The implementation and support might be difficult and the management of a large number of web services can turn out to be messy.

A third approach is to standardise the previously mentioned web services in a single architecture, called service-oriented architecture (SOA). SOA is a strategy to organize and standardise the different services and make them reusable. Applications are no longer recognized as single programs, but as independent loosely coupled services. The SOA architecture makes it much easier to define workflows and processes, and to centrally control and manage the numerous web services. Some initiatives have begun to implement a special e-learning SOA, others try to use an already-on-the-market SOA in order to connect to the LMS. All these SOA approaches give new perspectives. The demise of LMS is imminent. If an LMS is nothing more than a conglomerate of many different tools such as user administration, course management, communication and cooperation tools, and learning modules which are integrated somehow, then a SOA could replace the LMS and allow the different tools to coexist more freely. This would also have a positive side effect in bringing together formal and informal learning into one single environment. But there remain many problems to be solved. E.g. many universities nowadays have at least two course management systems; one for administrative departments, the other for e-learning, and both systems have specific features which would initially need to be integrated into one system.

New technologies open different perspectives to improve ICT-based learning. To some extent it is possible to improve the existing architecture of the main stream LMS. Web services fulfil the expectation of many educationalists to deploy an open and free learning environment which is learner oriented. Universities instead need to centralise and standardise learning processes and coordinate them with other business processes such as human resource management and accomplishment of examination regulations. SOA seems to be the ideal way to incorporate loose and flexible web services into a well structured workflow.

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## KEY ISSUES IN THE COORDINATION OF 150 ONLINE TEACHERS IN A FULLY VIRTUAL UNIVERSITY

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This paper considers the issues involved in coordinating large numbers of teachers working at the fully online Open University of Catalonia (UOC) and is based on the work of the UOC research group TACEV (*Collaborative work and learning in a virtual environment*). Our current analysis is enabling us to define our understanding of the concept of coordination, identify key aspects involved in the process and develop necessary research lines for the future.

The Open University of Catalunya is a fully online university created in 1995, with a purpose-built virtual campus ([www.uoc.edu](http://www.uoc.edu)), which relies, predominantly, on asynchronous computer-mediated communication. With approximately 40,000 students and a staff of full-time coordinators and part-time teachers (Catalan: *consultor*) and counsellors (Catalan: *tutor*), the UOC currently offers 17 undergraduate degree programs, postgraduate and masters courses, a doctoral program centred on the Information Society and several university extension courses.

In this paper we identify those factors which we consider crucial to the effective coordination of large groups of teachers working in an entirely online environment. This has been done using a qualitative case study approach within the framework of evaluation research of two cross-curricular subjects: English and Digital Literacy, each delivered by a team of approximately 80 part-time teachers.

The data for the first stage of the study have emerged from the following: observation of teacher interaction in messages posted in the virtual spaces on the UOC campus, analysis of work documents and interviews with the coordinators. These elements have been triangulated to enable us to draw various conclusions. Our research centres on a comparison of the work dynamics of the two teams of coordinators and teachers, based on common elements shared by both subjects and the high number of teachers and students involved. Points analysed include mode of coordination, staffroom dynamics, interaction among teachers, promotion of a learning community and teacher development.

The paper begins by examining elements common to English and Digital Literacy at the UOC: both are skill-based subjects evaluated via a system of continuous assessment; they have identical communication spaces (notice board, forum, debate, coordination mailbox and work groups) and teachers are all highly motivated, coming from a wide variety of professional and academic backgrounds. Based on these defining features and the overall university context, the article then outlines key issues related to online course coordination: coordination of teaching; promotion of teacher collaboration via the virtual staffrooms; monitoring of teaching; teacher development and the promotion of a sense of community among groups of online teachers. We consider the role of the coordinators in providing the relevant tools, online spaces and activities to foster interaction, exchange of information and the co-construction of knowledge, all of which ultimately improve the quality of the courses being delivered. Monitoring of teachers' work in their virtual classrooms, using both quantitative and qualitative approaches, and providing them with meaningful feedback are two aspects of special significance. The data gathered through this classroom monitoring, along with suggestions made by teachers, are used for the design of pre-service and in-service training activities.

The paper concludes with suggestions for future lines of research: teachers' perceptions of the online community; identification of additional factors which promote active collaboration amongst the members of the online community; the automation of processes involved in monitoring teachers' work.

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# SHARING DIGITAL RESOURCES IN AN ECONOMICS AND MANAGEMENT OPEN UNIVERSITY: EVALUATING QUALITY AND CERTIFICATION

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## Context

In France the government has decided to create digital thematic universities (DTU): Digital Thematic Universities are virtual organisations which draw together the University Campuses established in various universities and "Grandes Ecoles" around complementary themes. AUNEGE ("Association des Universit s pour l'enseignement Num rique en Economie et Gestion"), is one of these DTU: an association of universities for teaching economy and management. It is the fourth French UNT, created on May 18th 2005. The members of AUNEGE are: Universit  Paris Dauphine; Universit  Paris I; Universit  Paris Sud; Universit  Paris X; Universit  Nancy 2; Universit  Nice-Sophia-Antipolis; Universit  d'Auvergne; Universit  de Lille-1; Universit  de Rennes-1; Universit  de Valenciennes; Universit  de Bordeaux-4; Universit  d'Aix Marseille-3; CNED; EDHEC. The associate members are: UNIT; UMFV; AUF.

In July 2006, two projects were launched: a website project and a sharing resource project. This presentation deals with the second project.

## Project presentation

The project contains three phases: the first phase is the list of the resources which could be shared, the second phase is the evaluation, the sorting out and the certification of the resources and the third phase is the updating if necessary. In this presentation we will concentrate on phase 2. The main aim of this phase is to evaluate the resources listed by the institutions. Specialists from each institution evaluate these resources, from the point of view of pedagogy, technical aspects and legal issues such as IPR.

## Project methodology

The main difficulty of this project is that digital resources have to be evaluated but no suitable existing tools were found. A first step was thus to create the tool which would enable the evaluation to take place. Through literature review, the team searched for and listed criteria relating to digital resources. The resulting list of criteria was then assessed, refined and validated. The criteria were then organised into dimensions, these being groups of criteria relating to the same subject. Two evaluation grids were built with these dimensions: the first is a quality grid, the second is a sharing grid. The quality grid consists of 6 dimensions: technical aspects, design, accessibility, teaching/learning strategy, coherence, content quality. The sharing grid includes 4 dimensions: suitability for re-use by another teacher, possibility of modification, content quality and legal aspects. Each dimension is made up of between 4 and 10 criteria.

The evaluation of a dimension is achieved by the average values of the criteria.

## Conclusion

In this paper we want to show how a group of seven higher education institutions have worked collaboratively to design, produce and implement a tool for the evaluation of e-learning content with a view to pooling and sharing. We are sure that this tool and the accompanying methodology will be of interest to a wider community for adaptation and implementation in other contexts.

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## AN E-LEARNING MODEL FOR UNIVERSITIES

*Paolo Frignani, Giorgio Poletti, University of Ferrara, Italy*

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Although e-learning courses are not new to Italy, Italian universities have only recently come round to believe in them.

Roma Tre, at the Department of Experimental Teaching under Benedetto Vertecchi and Ferrara, at the CARID (University Centre for Innovative Teaching Research and e-learning Courses) were among the first universities that moved over to this type of teaching. The pioneering spirit, upon which CARID has bet so much, has had a positive outcome thanks to the consolidation of e-learning as the ideal teaching method for the socio-economic requirements of our times, the need for the right sort of training for today's business world (especially in areas which are poorly served), and the quality of organised courses as shown by student approval and ever-expanding research.

The age of access, as the modern world has been defined, has made everywhere and you the centre of the universe, a sort of second Copernican revolution. This scenario has embraced every sector of human enterprise: from politics to religion, from business to interpersonal relationships, thereby changing the rules thereof. And learning too, since it is too easy to understand, could not be excluded. Teaching, even when it avails itself of widely-used technology and when it is not a "technology starter course," has to face up to today's technology, take it on, and find the best way of involving learners and lecturers in using it.

At the University of Ferrara, e-learning is now a reality for 15% of the student population. It is clear that the demand of these proportions cannot be considered as a chance or marginal phenomenon, but is rather as an indication of a newer, more widespread demand for teaching from many different sectors, including schools. This demand will eventually mean that universities have to rethink their whole structures.

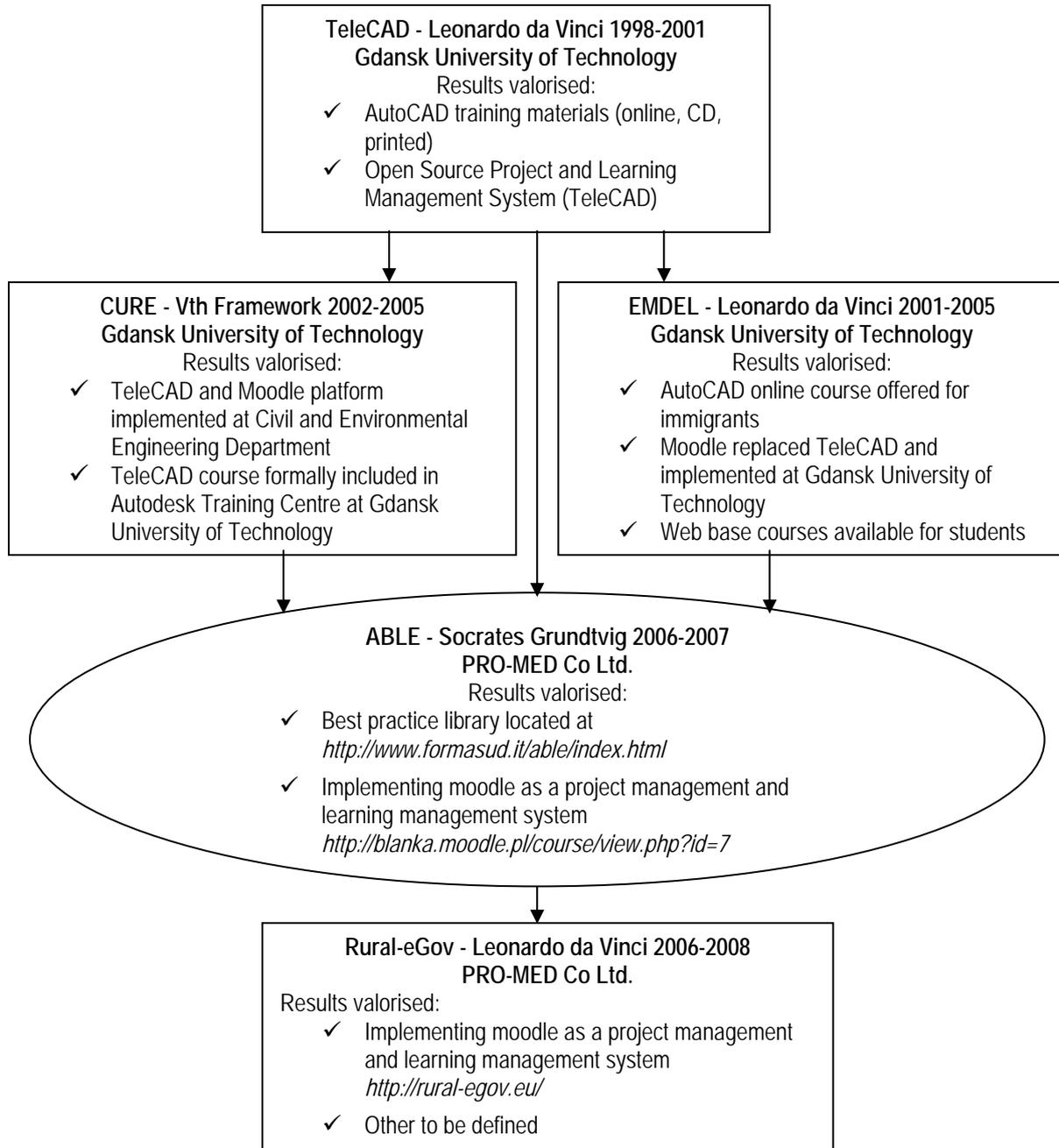
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## VALORISATION OF EUROPEAN PROJECTS RESULTS – CASE STUDY

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### The concept of EU projects valorisation



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