

# EDEN 2009 ANNUAL CONFERENCE

## Innovation in Learning Communities

*What did you invent for tomorrow?*

EDEN 2009 Annual Conference

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Alan Tait and András Szűcs

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## Innovation, learning and learning innovation in Europe

Europe needs a strategic approach to boost its capacity for creativity, whilst establishing an environment where knowledge is successfully converted into innovative products and services. For a flexible, competitive and open economy, independent innovation as the main driver of development has been fully acknowledged. The role of education and training as a determining factor in enhancing creativity, innovation performance and competitiveness is recognized in the concept of the “knowledge triangle”, comprising education, research and innovation.

Present education and training systems are however still inadequately equipped to face this challenge. The extent of innovative uses of technology is lower than had been hoped for: a new “innovation oriented” wave of policy making is urgently required. Substantial learning innovation is needed for which the knowledge base is now only fragmentary.

Developing creative, innovative skills demands the renewal of traditional teaching approaches, to be replaced by learner-focused models which support active involvement in the process of reflection and interpretation. An organisational culture supporting openness and creativity is a precondition for successful learning and innovation.

The birth of new knowledge and the process of its manifestation in this environment is being re-valourised. Pathways to novel solutions must be significantly shortened. In this process, Lifelong Learning and ICT are key boosters of change. Informal and non-formal learning helps shift the diffusion of innovation into every day life-practice. Supported by ICT, collaborative methods, exploratory learning, the social web, knowledge sharing and management occupy important positions. At present modern practical strategies and communication channels are being created, and new businesses built, changing the conventional patterns.

But what is the actual relation between innovation and education? Is innovation really a leading paradigm in our society? We often hear that education even kills innovation. And in reality, standardisation in big systems - nowadays a permanent process accompanying modernisation practice – may well contradict requirements for innovation. A critical relationship persists: original, creative ideas, more often than not, occur outside educational systems.

There are several important related questions to answer:

- How to empower innovation within the huge diversity of different learning situations and settings?
- How is it possible to measure creativity and innovation in learning systems?
- How to measure collaborative learning efforts?
- How to use existing and emerging technologies to create new value for learning?

In the European Year of Creativity and Innovation, the EDEN 2009 Annual Conference aims to contribute to the responses, with the valuable contributions of the academic and professional community in Europe and beyond.

András Szűcs  
EDEN Secretary General

Alan Tait  
EDEN President

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## TABLE OF CONTENTS

### INVENTIVE E-LEARNING METHODOLOGY

Assessment of Creativity and Innovation at Higher Education <i>Antonella Poce, Università degli Studi Roma Tre, Italy</i>	1
Blended or Fully Online: What Type of Student is More Successful in Which Modality? <i>Leon Cygman, Mount Royal College, Canada</i>	2
The Use of Competition and Creativity as Key Driver to Promote Scientific Culture among Students <i>Alberto Colorni, Susanna Sancassani, Simona Azzali, Alessandra Tomasini Centro METID – Politecnico di Milano, Italy</i>	3
Online Learning: Variations in Groups of Participants and Tools <i>Miri Shonfeld, Ilana Ronen, Kibbutzim College of Education, Israel</i>	4
Developing E-learning Design Capabilities in a Dual-mode Institution <i>Roger Dence, Alejandro Armellini, University of Leicester, United Kingdom</i>	5
Holding up a Mirror to Personal and Professional Development: Enhancing Reflective Learning in Distance Study <i>Troy Cooper, Helen Kaye, The Open University, United Kingdom</i>	6
Let the Students Talk – Use of Conversational Agents in Distance Education Environments to Achieve Active Learning <i>Agnieszka Landowska, Gdańsk University of Technology, Poland</i>	7
Assessment of Collaborative Work with Emergent Technologies <i>Montse Guitert, Teresa Romeu, Universitat Oberta de Catalunya – UOC, Spain</i>	8
Using Multiple Online Security Measures to Deliver Secure Course Exams to Distance Education Students <i>David Foster, Nancy Mattoon, KRYTERION, United States of America Rick Shearer, Pennsylvania State University’s World Campus, United States of America, Paul Walker, KRYTERION Europe</i>	9
The Pedagogic Implications of Online Marking <i>Zoe Doye, Ieman Hassan, The Open University, United Kingdom</i>	10
A Synthesis of Competency Requirements for Electronic Curriculum Developers Compiled within the Framework of the ACVCD Project <i>Tamas Kopeczi Bocz, Krisztina Mihalyi, Observatory for Educational Development, Katalin Kovacs, Digital Pedagogy Professional Service Providing Institution, Hungary</i>	11
Invented for Tomorrow: A New Paradigm for Instructional Design The Semantic Interpretation <i>Ken Currie, CAPDM Ltd., Sally Anderson, Education consultant, United Kingdom</i>	12
From Nowhere to Glo-Ware: The Evolution of a Generative Learning Object <i>Dawn Leeder, University of Cambridge, United Kingdom</i>	13
Personal Reflective Journals: Enhancing the Sense of Community in Distance Learning <i>Tami Seifert, Kibbutzim College of Education, Technology and Art, Israel</i>	14
The Development and Implementation of a Tool for Diagnosing Innovation in Academic Teaching <i>David Pundak, Kinneret College on the Sea of Galilee and ORT Braude College, Orit Herscovitz, ORT Braude College and the Department of Education in Technology and Science, Technion, Miri Shacham, ORT Braude College, Israel</i>	15

High School Students in the New Learning Environment: A Profile of Distance e-Learners <i>Dale Kirby, Dennis B. Sharpe, Memorial University of Newfoundland, Canada</i>	16
Listening to our Learners' Experiences of E-Learning: A Pre-Requisite for Innovation <i>Malcolm Ryan, Lynne Jump, Wendy Cealey Harrison, Rita Headington, University of Greenwich, United Kingdom</i>	17
The Educational Significance of Digital Storytelling <i>Jean Claude Callens, K.U.Leuven, Center for Instructional Psychology and Technology &amp; KATHO, Education and Quality – Impetus Center, Jan Elen, K.U.Leuven, Center for Instructional Psychology and Technology, Belgium</i>	18
E-Portfolios as Tools to Assess Generic Competences in Distance Learning Study Courses <i>Julia Krämer, Günther Seeber, WHL Graduate School of Business and Economics Lahr, Germany</i>	19
Digital, Social and Civic Competences, Keys for Talented Lifelong Learners <i>Sylvia van de Bunt-Kokhuis, Vrije Univeriteit, The Netherlands, Mary Bolger, National Learning Network, Ireland</i>	20
Evaluating Continuous Assessment Quality in Competence-based Education Online: The Case of the e-Folio <i>Alda Pereira, Isolina Oliveira, Luís Tinoca, Lúcia Amante, Maria de Jesus Relvas, Maria do Carmo Teixeira Pinto, Darlinda Moreira, Universidade Aberta, Portugal</i>	21
Inter-cultural Comparisons of Staff Perceptions on Quality in Online Distance Learning <i>Mark Endean, The Open University, United Kingdom, Bai Bin, The Open University &amp; Beijing Normal University, China, Steven Swithenby, The Open University, United Kingdom</i>	22
Wikipedia in University Teaching – Objectives and Results of Adopting Collaborative Text Editing Assignments <i>Frank Schulenburg, Wikimedia Foundation, United States of America, Klaus Wannemacher, HIS GmbH, Germany</i>	23
Small-Group Collaborative Learning Activities in Large-Group Web-based Courses: Effectiveness, Efficiency & Sustainability <i>Alexander Romiszowski, Carlos Villalba, Syracuse University, United States of America Robinson Noronha, Federal Technological University of Paraná, Andrea Correa, FUNDAP, Brazil</i>	24
Online Learning Communities – Communities of Practice and their Relation to Emerging Net Cultures <i>Ove Jobring, University of Gothenburg, Ingemar Svensson, Vasteras Folkhigh-School, Sweden</i>	25
Group Tutoring as a Quality Resource in Higher Education by Means of E-Learning <i>Margarita Pino Juste, Universidad de Vigo, Beatriz Rodríguez López, UNED, Spain</i>	26
New Communities – New Spaces and New Ways for Learning <i>Kirsti Ala-Mutka, European Commission, Joint Research Centre, Institute for Prospective Technological Studies (IPTS)</i>	27
Wikis and Blogs: Combining Social Software Tools to Create Collaborative and Reflective Learning Spaces <i>Steve Wheeler, University of Plymouth, United Kingdom</i>	28
Ubiquitous (and) Social Learning – Where is the Potential for Innovation? <i>Valentina Castello, Dida – University of L'Aquila, Saverio Pescuma, ISFOL, Giovanni Sorrentino, Vittorio dell'Aiuto, Chiara Sancin, Dida, Italy</i>	29
Small Group Computer-Supported Collaborative Learning <i>Tamar Benaya, Anat Lerner, The Open University of Israel, Judy Tal, LearningCycles Centre, Israel</i>	30
Deploying Broadband-based Infrastructure and E-Learning Services to Enhance Social Networking and Teachers Professional Development in Remote Rural Schools <i>Pavlos Koulouris, Sofoklis Sotiriou, Evi Chrysafidou, Ellinogermaniki Agogi, Nektarios Tsagliotis, George Neofotistos, University of Crete, Greece</i>	31

## INSTITUTIONAL INNOVATION

Learning Communities and Networks: Innovation and Quality for New Learningscapes <i>Ulf-Daniel Ehlers, University Duisburg-Essen, Germany</i>	32
Wiki Future Gazing <i>Sandra Romenska, Beyond Distance Research Alliance, University of Leicester, United Kingdom</i>	33
Bachelor and Master Online – Community-Building in Networks of International Universities <i>Rolf Granow, Lübeck University of Applied Sciences / oncampus, Germany</i>	34
Leading Innovation in New and Emerging Technologies in Public Schools <i>Jean Brown, Bruce Sheppard, David Dibbon, Memorial University, Canada</i>	35
Embedding Institutional Innovation <i>Niall Sclater, The Open University, United Kingdom</i>	36
“Five F”, A Flexible Form for Professional Life Long Learning – How ICT can Make Distance Education Become a Disruptive Technology <i>Eva Carling, University of Gävle, Sweden</i>	37
E-Creation – An Original Way of Integrating Distant Learning Orientation in Presential Courses <i>Anne-Dominique Salamin, HES-SO Valais, Cyberlearn, Switzerland</i>	38
Knowledge Transfer in the Field of New Teaching and Studying Forms under Reference of Research Activities at Zwickau University <i>Christian-Andreas Schumann, Sabine N. Tittmann, University of Applied Sciences Zwickau, Rolf Granow, University of Applied Sciences Lübeck / Oncampus GmbH, Germany</i>	39

## E-LEARNING POLICY AND STRATEGY

The Changing Learning Experience: Higher Education in a Web 2.0 World <i>John C. Fothergill, University of Leicester, United Kingdom</i>	40
How Green is Your Learning? Pedagogical Options for Environmentally Sustainable Education <i>Samuel Nikoi, Matthew Wheeler, Beyond Distance Research Alliance, University of Leicester, United Kingdom</i>	41
Innovation through Convention? Building Consensus for RPL Practice in Canadian Universities <i>Dianne Conrad, Athabasca University, Canada</i>	42
A Proposal to Harmonize Virtual Mobility and the European Qualification Framework <i>Alfredo Soeiro, Rita Falcão, University of Porto, Portugal</i>	43

## CREATIVE MODELS AND SOLUTIONS OF CORPORATE PROVIDERS

Innovative In-Company Learning Initiatives in Ireland: Learning to Learn through Collaborative Partnerships <i>Alan Bruce, Universal Learning Systems, Joe Kelly, Waterford Crystal plc, Ireland</i>	44
Non-Conventional Devices in Training: Using a PSP in a Bank Setting <i>Silvia De Ascaniis, Stefano Tardini, Lorenzo Cantoni, eLearning Lab USI/SUPSI, Switzerland</i>	45
Human Resource Management Practices, Organisational Commitment and Work Behaviours: The Importance of Training and Development Practices <i>Teresa Esteves, Portuguese School of Bank Management – ISGB, António Caetano, Lisboa University Institute (ISCTE/IUL), Portugal</i>	46

Change, Cultural Difference and Competitiveness: Innovative Diversity e-Learning in the Finnish Customer Service Sector <i>Alan Bruce, Universal Learning Systems, Ireland, Teemu Patala, Ari Ketola, Context Learning Finland, Finland</i>	47
A Passport to Opportunity: The Learning Model of The Cisco Networking Academy <i>Anna Czacharowska-Rybkowska, Poland, Frantisek Jakab, Slovakia, Gabriella Béni, Hungary, Karol Kniewald, Czech Republic, Markus Schwertel, Germany, Cisco Networking Academy Central and Eastern Europe</i>	48
Using Wireless Technologies for Context Sensitive Education and Training <i>Ed O'Brien, LM Ericsson, Ireland</i>	49
Empowering Innovation in Technology-Enhanced Instruction: The Teacher Training Program "Intel® Teach – Advanced Online" <i>Thomas Osburg, Intel Corp., Alben Todorova, University of Munich, Germany</i>	50
Nauczyciel.pl – Integrator on Education Services Market <i>Sebastian Wasiołka, Young Digital Planet S.A., Poland</i>	51
 <b>WEB 2.0 – VIRTUAL REALITY – NEW ICT AND MEDIA SOLUTIONS</b>	
A Renaissance of Audio: Podcasting Approaches for Learning on Campus and Beyond <i>Palitha Edirisingha, David Hawkrigde, John Fothergill, University of Leicester, United Kingdom</i>	52
Modern Engineering Design Education Based on KaLeP and State-of-the-art ICT Solutions <i>Albert Albers, Thomas Maier, Christian Sauter, Martin Geier, Institute of Product Development, University of Karlsruhe, Germany</i>	53
C-Thinking via Computer-Supported Instruction <i>Ayse Kok, University of Oxford, United Kingdom</i>	54
Facilitating the Access to Digital Learning Resources by Harvesting and Federation of Learning Object Repositories <i>Fredrik Paulsson, Umeå University, Sweden</i>	56
Community-based Mentoring and Innovating through Web 2.0: Challenges and Tensions <i>Cristina Costa, Helen Keegan, University of Salford, United Kingdom, Anne Fox, CV2, Denmark</i>	57
Towards Learning Object Metadata Quality Control – The Next Steps <i>Daniel Dahl, Gottfried Vossen, European Research Center for Information Systems – ERCIS, Germany</i>	58
PIIK, A Collaborative News Filtering System for an E-learning Community in Higher Education <i>Platteaux Hervé, Hœin Sergio, Monnard Jacques, Jimenez François, Collaud Gérald, University of Fribourg, Switzerland</i>	59
Mobi-Blog: Informal Learning through Social Software to Support Mobile Students <i>Thomas Fischer, Institute for Innovation in Learning (FIM NewLearning), University of Erlangen-Nuremberg, Germany, Nikos Zygouritsas, Lambarkis Foundation, Greece, Shirley Williams, University of Reading, United Kingdom, Begoña Arenas, SCIENTER España, Spain</i>	60
Tutoring at a Distance, Online Tutoring and Tutoring in Second Life <i>David Hawkrigde, Matthew Wheeler, Beyond Distance Research Alliance, University of Leicester, United Kingdom</i>	61
Creating New Value for Learning Using Virtual Reality <i>Heidi Boetsch-Loewinsohn, Gatlin International LLC, United States of America</i>	62
Second Life for Archaeology, Digital Photography and Media and Communications Education Three Case Studies <i>Ming Nie, Palitha Edirisingha, Matthew Wheeler Beyond Distance Research Alliance, University of Leicester, United Kingdom</i>	63

The Use of Virtual Reality for Pedagogical Visits in Museums and Galleries: The Case of 360 Panoramas <i>George Kavouklis, Costas Tsolakidis, University of the Aegean, Greece</i>	64
A Digitally Enhanced Learner-Focused Model of Internationalization <i>Rosie Crane, Pat Gannon-Leary, Northumbria University, United Kingdom</i>	65
School Libraries – Capitalizing E-Learning Possibilities towards New Challenges <i>Odília Baleiro, Rosa Canhoto Martins, School Libraries Network Office, Portugal</i>	66
A New Conceptual Approach to Creative E-course Model Design in English for Engineering Students <i>Diana Rumpite, Riga Technical University, Latvia</i>	67
Creativity and Innovation in Learning: The Changing Roles of ICT <i>Mehmet Kesim, Anadolu University, Turkey</i>	68
A Collaborative Platform for Designing Ubiquitous Learning <i>Haruo Nishinosono, Institute for Learning Development, Kyoko Saio, Kansai University, Kunio Nakamura, Johoka Utopia, Japan</i>	69
Scaffolding Professional Discourse through Cognitive Tools: The Mapit Discussion Environment in Two Different Sociocultural Settings <i>Andrea Kárpáti, Eötvös Loránd University, Pál Molnár, Károly Gáspár University, Hungary Raul Drachmann, The Hebrew University of Jerusalem, Israel</i>	70
I-Peter II – A Hybrid Collaborative and Individual Environment for the Distance Learning of Business English <i>Pilar Rodríguez Arancón, Universidad Nacional de Educacion a Distancia – UNED, Spain</i>	71
Implementation of Social Features in a Domain-Specific Portal about E-Learning <i>Ramón Ovelar Beltrán, Oskar Casquero Oyarzabal, Manuel Benito Gómez, Basque Country University, Spain</i>	72
<b>INTERNATIONAL AND NATIONAL MODELS</b>	
Beyond the Technology: Developing Innovative Global and European Partnerships <i>Don Olcott, Jr., The Observatory for Borderless Higher Education, United Kingdom</i>	73
The Next Generation of Learning Technology Standards <i>Rob Abel, IMS Global Learning Consortium, United States of America</i>	74
Video, Multimedia and Constructivism Creating New Value for Training Vietnamese School Teachers <i>Jack Koumi, Educational Media Production Training, United Kingdom</i>	75
A Case Study of an International E-Learning Section <i>Rory McGreal, Athabasca University, Canada</i>	76
The Introduction of Continuing Professional Education Online in a Region of Russia <i>David Hardy, Distance Education International, United Kingdom Yulia Petrovich, I. Kant State University of Russia, Russia</i>	77
E-Learning Processes in Higher Education in Lithuania <i>Danguole Rutkauskiene, Daina Gudoniene, Kaunas University of Technology, Lithuania</i>	78
EuNeOn – The European Network of Networks for Higher Education Online <i>Paul Ruehl, Georg Seppmann, EuNeOn / Bavarian Virtual University, Germany</i>	79
Distance Education Hub (DEHub) <i>Belinda Tynan, University of New England, Australia</i>	81

## ECONOMIC AND MANAGEMENT ASPECTS OF E-LEARNING

- Implementing a Cost Effectiveness Analyzer for Web-Supported Academic Instruction: a Campus Wide Analysis 82  
*Anat Cohen, Rafi Nachmias, Tel Aviv University, Israel*
- From Teaching to Testing – A Business Model for OER 83  
*Bernd Remmele, Günther Seeber, Graduate School of Business and Economics Lahr, Germany*
- Web 2.0 Technologies to Streamline the Public Administration and to Support the Reformation Process:  
An Advanced New Public Management? 84  
*Paolo Zocchi, Stefania Miceli, Scuola Superiore della Pubblica Amministrazione Locale – SSPAL, Italy*

## POSTERS

- Improving Knowledge Building Support: Design and Assessment of a Discussion Tool 85  
*Iolanda Garcia, Begoña Gros, Universitat Oberta de Catalunya, Spain*
- The Use of a Peer-Assessment and a Reflection Report to Measure Collaborating Learning Efforts  
An Interdisciplinary Project for Students of the Faculty of Teacher Training, the Faculty of Social Work and  
Welfare Studies, and the Faculty of Health Care 86  
*Kristof Uvijjn, University College Ghent, Belgium*
- The E-Code Application 87  
*Alfonso Santaniello, Brunella Maio, CONFORM – Consorzio Formazione Manageriale, Italy*
- Solutions for the Computer Supported Collaborative Learning Problems 88  
*Sanda Porumb, Aurel Vlaicu, Bogdan Orza, Technical University of Cluj-Napoca,  
Cosmin Porumb, Smaranda Selagea, HyperMedia, Romania*
- Blended Learning Approach for Architecture and Arts 89  
*Pedro Neto, Andrea Vieira, Lúgia Ribeiro, University of Porto, Portugal*
- Innovations in Virtual Mobility – A Pre-Virtual Mobility Support Phase 90  
*Mateja Geder, Nataša Ritonija, College of Business Doba Maribor, Slovenia  
Eva Abramuszkinová, NEWTON College, Czech Republic  
William van Zanten, School of Management, Open University of the Netherlands, The Netherlands  
Eija Kempas, Raahe School of Engineering and Business, Finland*
- Online Innovation and Pedagogical Change: Widening the Circle of Early Adopters 91  
*Sarah Schrire, Zipi Zerkovich, Kibbutzim College of Education, Technology and Art, Israel*
- Semantic Multimedia Annotation – An Emergent Methodology for Collaboration in E-Learning 92  
*Attila Paksi, Andrea Kárpáti, János Handó, Eötvös Loránd University, Hungary*
- The Blending of Three Channels for Delivering a Comprehensive and Innovative Distance Learning Course 93  
*Mikhail Feituri, Federica Funghi, Consorzio For.Com. Formazione per la comunicazione, Italy*
- ICTeacher – Back to the Roots and Right on to the Future: Developing a European ICT Teacher Training to  
Implement Innovations in Teaching and Learning 94  
*Katharina Toifl, Franziska Steffen, Die Berater, Austria*
- Testing English for Specific Purposes in Science – TESPIS 95  
*Walter Zeller, astyle, linguistic competence, Austria*
- ESP and ICT – Friends or Foes 96  
*Iwona Misztal, Jagiellonian University in Krakow, Poland*

On Teaching Academic English as Foreign Language through E-Learning Technologies at Technical University <i>Iryna V. Sekret, Dnieprodzerzhinsk State Technical University, Ukraine</i>	97
Innovative Ways of Using Blogs to Teach Foreign Languages <i>Raquel Varela, Luisa Sevillano, UNED, Ángeles Pascual, Universidad de Oviedo, Spain</i>	98
A Distance and E-Learning European Joint Master Degree: Significance and Impact <i>Samuel Gento, María-C. Domínguez, National University of Distance Education (UNED), Spain</i>	99
Online Master's Programs – Bold Ventures or Scams? <i>Éva Sándor-Kriszt, Anita Csesznák, Tamás Radványi, Budapest Business School, Hungary</i>	100
A Modern Economic Approach to E-ducation <i>Zoltan Varga, Daniel Palosi, Dennis Gabor Applied University, Hungary</i>	101
Virtual Mobility Coordinators – Unknown Reality? <i>Eva Abramuszkinová Pavlíková, NEWTON College, Czech Republic Mateja Geder, Nataša Ritonija, College of Business Doba Maribor, Slovenia</i>	102
The Development of Common Quality Criteria within Cooperation for Net-based Learning <i>Bo Malmström, University of Gävle, Lasse Bourelius, Blekinge Institute of Technology, Per Lind, Luleå University of Technology, Brittmarie Myringer, Mid Sweden University, Bo Svanteson, UR (Swedish Educational Broadcasting Company), Sweden</i>	103
Flexible Learning Environment – A Pedagogic Model for Student Success <i>Karin Orving, Britt Englund, Ulla Andersson, Mid Sweden University, Sweden</i>	104
Learning to E-Teach – First Steps to the Implementation of E-Learning <i>Zygmunt Kucharczyk, Tomasz Walasek, Jacek Piątkowski, Artur Błaszczuk Częstochowa University of Technology, Poland</i>	105
Leisure in the Cyberspace – Quantitative and Qualitative Changes of Leisure Time Budget over the Past Twenty Years <i>Maria Truszkowska-Wojtkowiak, University of Gdansk, Poland</i>	106
Leisure Time – Sacrum vs. Profanum from Ancient Edges to Information Society <i>Maria Truszkowska-Wojtkowiak, University of Gdansk, Poland</i>	107
Learning E-democracy: The Urbino Blended Learning Model Applied to E-governance <i>Giovanni Torrasi, Federico Savini, University of Urbino, Italy</i>	108
Lifelong Learning Scenarios in 3D Worlds <i>Thomas Kretschmer, Simon Heid, Institute for Innovation in Learning (FIM NewLearning), Germany</i>	109
Podcast – It's too Easy Not to Try <i>Tomasz Walasek, Czestochowa University of Technology, Poland</i>	110
The Present and Future of Educational Video Games and a Game Scenario Prototype <i>Miklós Biró, Csaba Horváth, Corvinno Technology Transfer Center, Hungary</i>	111
Electronic Exam System for Students Ability in Programming <i>Sándor Kaczur, Dennis Gabor Applied University Sándor Kopácsi, D. G. Applied University &amp; Computer and Automation Research Institute, Hungary</i>	112
Modelling Simulators as Educational Technologies for Higher Education <i>Olga Grishina, Elena Sidorova, Russian Plekhanov Academy of Economics, Russia</i>	113
Micro-training, Open Educational Resources on Geographical Information Systems (GIS) From Daily Use of GIS to Professional Training and Master Courses <i>Ebba Ossiannilsson, Lund University, Sweden, Hilding Sponberg, Gjøvik University College, Norway</i>	114

Educonlinux: Free and Open Source Server Based on Linux for Multimedia Classrooms in Schools and Universities <i>Panayiotis Angelides, University of Nicosia, Cyprus, Anestis Papadopoulos, Platon Schools, Greece</i>	115
Lifelong Learning: Continuing Medical Education through Mobile Devices for Health Care Workers on the Move <i>Inge de Waard, Maria Zolfo, Carlos Kiyari, Institute of Tropical Medicine, Belgium</i>	116
Design and Implementation of E-Learning 2.0 Courses at University of Gdansk <i>Stanisław Wrycza, Michał Kuciapski, University of Gdansk, Poland</i>	117
E-Learning at Gdansk University of Technology – From 1995 and Beyond 2009 – Autodesk Authorised Training Centre Case <i>Anna Grabowska, Gdansk University of Technology, Poland</i>	118
E-VITA – An Innovative and Creative Approach to Knowledge Sharing and Transfer in an Intergenerational Setting <i>Sónia Hetzner, Institute for Innovation in Learning (FIM NewLearning), Germany Lucia Pannese, imaginary srl, Italy</i>	119
E-Learning Systems for Persons with Disabilities <i>Jolanta Chec, National Institute of Telecommunications, Poland</i>	120
The Simulation for the Star Rating of Social Care Services <i>Marcello Hinxman-Allegri, Gavin Nettleton, SCIE, United Kingdom, Lucia Pannese, imaginary srl, Italy Kevin Pudney, Malcolm Rose, SCIE, United Kingdom, Mauro Santalmasi, imaginary srl, Italy</i>	121
Seniorlab: An Innovative, User-Driven, Lifelong Learning Project Based on the Experiences of Senior Citizens <i>Ricardo Torres, Fi2cat, Rosa Casanovas, Universitat de la Gent Gran, Artur Serra, Fi2cat, Doris Moreno, Universitat Autònoma de Barcelona, Dolors Solano, CitiLab, Carlos Bezos, Value Creation, Isidor Fernández, CitiLab, Spain</i>	122
Celebrating the Difference: Understanding the Advantages of Using Cultural Awareness to Empower Innovation in Online Learning Communities <i>Carolina Suarez, Universidad Autonoma de Guadalajara, Mexico</i>	123
Creativity and Problem-based Learning in an MSc HRM Program <i>Elmira Bancheva, Maria Ivanova, New Bulgarian University, Bulgaria</i>	124
COACH BOT – Modular e-Course with Virtual Coach Tool Support <i>Ilaria Mascitti, Mikail Feituri, Federica Funghi, Susanna Correnti, Luca Angelo Galassi Consorzio For.Com. Formazione per la comunicazione, Italy</i>	125
Investigating the Patterns of Interactions in the Calibrate Project The Use of Social Network Analysis <i>Helga Dorner, Central European University and University of Szeged, Hungary</i>	126
Analysing Collaborative Groupwork in a Social Network for Intercultural Collaboration between Japanese and Hungarian University Students with Network Analysis Methods <i>Pal Molnar, Karoli Gaspar University and University of Szeged, Hungary</i>	127
Multidisciplinary Program E-Learning of Agriculture in Poland: Characteristic of Method and Kind of Tests <i>Juliusz C. Chojnacki, Krzysztof Pacewicz, West Pomeranian University of Technology in Szczecin, Poland</i>	128
Development of Innovative Technology-Focused Adult Education <i>Vida Motekaityte, Aleksandras Targamadze, Kaunas University of Technology, Lithuania</i>	129
Distance Learning as a Tool, Providing the Value of Latvia's Human Capital in Labour Market of Europe <i>Ineta Kristovska, Mara Lice, College of Business Administration, Latvia</i>	130
Impact of CMS Systems on the Development of Educational Institutions <i>Dina Vasic, Karmela Aleksic-Maslac, Marko Kupresak, Zagreb School of Economics and Management, Croatia</i>	131

E-education: 2020 Perspective <i>R. Robert Gajewski, Warsaw University of Technology, Poland</i>	132
 <b>DEMONSTRATIONS</b>	
Explore Partnership Building, Networking and Collaboration Opportunities Using “E-Senior” in MagazineFactory <i>Anna Grabowska, PRO-MED Co Ltd., Poland, Rick Swindell, Griffith University, U3A Online, Australia</i>	133
InterACTEd: An Interactive Annotation and Collaboration Tool for Time Based Media <i>Andrew Hall, University of Manchester, United Kingdom Claudia Zentgraf, Technische Universität Darmstadt, Germany</i>	134
New Technologies in Science Teaching: Developing an Online Beginner's Guide <i>James de Winter, Mark Winterbottom, Elaine Wilson, University of Cambridge, United Kingdom</i>	135
Rapid E-Learning Tools in Academic Practice <i>R. Robert Gajewski, Warsaw University of Technology, Poland</i>	136
Simplifying Grading and Improving Student Performance and Perceptions with Rubrics <i>Vicki Galloway Harsh, Colorado Community Colleges Online/Pearson eCollege, United States of America</i>	137
Enhancing Learning Opportunities for Valuation Students Using Multimedia <i>Nikki Bulteel, Sarah Slevin, The College of Estate Management, United Kingdom</i>	138
T3 – Tray Training Test: Learning by Interacting with a Quiz Platform <i>Susanna Sancassani, Simona Azzali, Alessandra Tomasini, Centro METID – Politecnico di Milano, Italy</i>	139
Test of Digital Competence and E-maturity for Adult Learners <i>Ingrid Radtke, Vox – Norwegian Institute for Adult Learning, Norway</i>	140
From Static Web Presence to Dynamic E-Social Reputation: An On-Line Evaluation Tool for Education Professionals <i>Ken Marsh, Malcolm Ryan, Simon Leggatt, University of Greenwich, David Gray, University of Surrey, Ildiko Mazar, European Distance and E-Learning Network, United Kingdom, Saverio Pescuma, ISFOL, Luca Ferrari, ScienTer, Italy, Alicia Berlanga, Technical University of Catalonia, Spain Serge Ravet, European Institute for eLearning, France</i>	141
Teaching Statistics and Research Methodology with E-Learning as a Part of Initial Teacher Training <i>Jacob Gujski, Miri Shonfeld, Kibbutzim College of Education, Technology and Art, Israel</i>	142
Training Speaking Skills in Distance Education <i>Pieter Van Haute, Expertise Group Distance Learning, KATHO University College, Tiel, Belgium</i>	144
Learning Processes & Multimodal Representations <i>Helena Danielsson, Lena Åström, Dalarna University, Sweden</i>	145
Presentation of the Pedagogical and Graphic Design Innovation Aspects of the Language Courses Developed by the Polish Virtual University in the EU Leonardo da Vinci Project – Developing English and German Language Course and Vocational Thematic Materials for Au Pairs <i>Marta Dziubińska, Polish Virtual University, Poland</i>	146
The E-Learning System of Vienna University of Technology – Adaptations, Enhancements and Extensions of Moodle to Meet Teaching and Learning Needs of the Future <i>Katarzyna Potocka, Andreas Hruska, E-Learning Centre, Vienna University of Technology, Austria</i>	147

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# ASSESSMENT OF CREATIVITY AND INNOVATION AT HIGHER EDUCATION

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## The Issue

Universities cannot but be places of creativity but it is obvious that promoting initiatives aimed at creative innovations can be risky. If university does not take these sorts of risks, it will lose quality and will miss important opportunities, as Tosey<sup>1</sup> (2000) points out. The problem to be investigated regards how to assess creative processes in order to exploit and promote them, if creativity should be part of a successful higher education. The assessment of creativity has several layers. It consists of a complex system of variables and therefore requires a careful study of the situation where the creative actions take place. Considering the importance of the processes which lead to creativity, it is remarkable that there have not been a considerable number of studies on the assessment of creativity. A few of these are described here.

One of the most recent studies on the assessment of creativity has been carried out by Cowan<sup>2</sup> (2006), who, in line with the findings of Szimanski and Harkins (1992), considered that the key to assessing such a problematic and essential skill as creativity is self assessment.

In my opinion, the model suggested by Cowan has to be considered, because its main aim is the assessment of the levels of creativity reached by higher education students at a particular time in their learning path. Adopting this model, students not only assess themselves but, being more aware of what they are doing, they have the opportunity to improve their learning.

## Research Questions and Hypothesis

The first question to be addressed, in such a complex study as the one where the creative abilities are involved, is to understand if a defined pattern to assess those abilities can be identified. The main hypothesis developed here refers to the possibility that self-assessment of creative skills can produce a better understanding of the processes that guide to the creation of innovative knowledge. To verify the hypothesis, a two-phase research activity has been carried out.

- First, the level of understanding of what creativity is and how it is applied in the learning path undertaken by the students of one of the groups of analysis has been investigated.
- The second phase of the research has been devoted to the conception of an instrument aiming at self-assessing critical thinking skills, considering that they are essential in solving academic problems in an effective and innovative way.

Another aspect of the matter that had to be investigated was the role of innovative technology in the development of *critical thinking skills*. This aspect influenced also the choice of the units of analysis and produced some of the items of the tool of investigation. The above instrument was conceived as a questionnaire, where each student had to reflect on the peculiarities of and self assess his/her own levels of the above.

The groups of higher education students which have been identified to test the model of assessment described above have been singled out from the University Roma Tre and the from Nottingham University.

The contribution presented at the Conference describes the results obtained after the administration of the above instrument of analysis and highlights the possible developments of the study.

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<sup>1</sup> Paul Tosey is senior lecturer in management at the School of Management at the University of Surrey.

<sup>2</sup> John Cowan is a British expert in the field of innovative higher education teaching.

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# BLENDING OR FULLY ONLINE: WHAT TYPE OF STUDENT IS MORE SUCCESSFUL IN WHICH MODALITY?

*Leon Cygman, Mount Royal College, Canada*

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## Introduction

The purpose of this project was to investigate the demographics of the successful distance learner in fully online courses versus a blended distance education environment. This researcher examined learner outcomes and satisfaction in fully online and blended distance education courses. The focus of this research project was to examine the demographics of successful learners in fully online and blended distance education courses. As e-learning is the newest form of delivering course materials, postsecondary institution administrators must understand which learners are best suited for this type of delivery. Thus, the results of this study can provide valuable information for postsecondary administrators in order to plan course offerings; for course designers in order to better design online course materials; for school advisors in order to advise learners; and for learners in order for them to choose appropriate courses that best suits their learning needs.

## Problem Statements

The first research question was: Is there a statistically significant relationship between the demographics of learners and their success in fully online distance education courses? This research question was presented to the survey questionnaire participants in survey questions which identified the demographic features to be analyzed in this study. The second research question was: Is there a statistically significant relationship between the demographics of learners and their success in blended distance education courses? This research question was presented to the survey questionnaire participants in survey questions which identified several demographic features.

## Results and Recommendations

In fully online courses, the research shows that older learners, those with higher grade point averages, and learners with postsecondary education experience, will achieve higher grades and get more satisfaction from the experience. Age and postsecondary experience is linked to higher grades, while postsecondary experience is linked to a higher satisfaction. Learners without these characteristics can still do well in the fully online learning modality, but may find it more difficult to achieve the same level of academic achievement and satisfaction. It is the recommendation of this researcher that learners who are older with higher grade point averages and postsecondary experience be encouraged to continue their education with fully online courses. This researcher can clearly indicate that they will perform well and will enjoy the distance education experience.

Successful blended learners come from a slightly different demographic than successful fully online learners. Although both require a higher grade point average for higher success levels, the blended learner should also be familiar with Internet technologies. Due to the additional support received in the face-to-face component of the blended course, age does not seem to be a factor of success for the blended learner. The recommendation of this researcher would be to gauge the level of knowledge of Internet technologies of potential blended learners, ensuring that they are comfortable in effectively using them before enrolling in a blended learning course. If not, they should be given an orientation to the technologies involved in their blended learning materials. For those learners who have a lower grade point average and choose to embark on a blended learning course of study, it is the recommendation of this researcher that they should be closely monitored and that support is provided at the first sign of academic difficulties.

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# THE USE OF COMPETITION AND CREATIVITY AS KEY DRIVER TO PROMOTE SCIENTIFIC CULTURE AMONG STUDENTS

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The pedagogical value of game generally speaking, has been extensively argued since the past by several studies of educational scientists (Fröbel, 1826; Decroly, 1921). This conception is based on the idea that young people owns great expressive and creative capabilities and that education, that often involved positive competitive interaction, is able to motivate young people to learn, involving them in knowledge process consistent with their interests and abilities. These kind of activities put at stake imagination and creativity and lead students to actively learn having fun together with their classmates. In this reality, competition, if proposed as further game element, could raise the quality participation of young people to didactical activities and enable collaborative learning processes in which everyone can give its personal contribution to the construction of knowledge seen as a great social game. Moreover, children and teens own several different languages and codes to express themselves that cannot be identified only with formal linguistic skills (oral and written) if we will not lose them (C. Edwards, L.Gandini, G. Forman, 1995).

The integration of elements that provide competitive and collaboration activities is therefore a key factor on which to invest in the construction of learning courses, mainly because they aim at stimulating the creativity of young people in developing new expressive languages. This is even truer in the reality in which Centro METID operates: a science university center that aims at supporting the dissemination of scientific knowledge within school. Investing on competition and on creativity spur through the use of new languages is particularly successful in engaging and trying to interest in technical and scientific subjects a kind of users (mostly students between 11 and 19 years). From this point of view, it is necessary to pay special attention to the choice of language and format: on one hand the addition of a work load raises the risk of drop-out among the participants, to the other dealing with critical content, generally regarded as hard and heavy, needs to highlight the practical use and to improve pleasantness and involvement aspects. Formats should be flexible and varied, must integrate different tools and activities, should provide interaction and collaborative learning moments among users, they must leave the traditional books language and be closer to students reality offering new solutions designed to make content and process more engaging and interesting. This is the point at which it is necessary to tie a series of online tools that can facilitate the development and dissemination among students. One of the solutions that we have followed to achieve these goals has been to focus on didactic formats mainly based on the logic of competition (or contest) and cooperation: language and tools have been declined in individual or team competitions in single or class rankings, in expert panels and popular juries, in prizes quiz and final awards, all designed to assimilation of concepts, but also the involvement and socialization.

Using the right mix of game, competition and cooperation led to a high level of involvement and commitment of students, not only by increasing the specific knowledge but also developing a conscious and critical approach towards the scientific knowledge and its potential. In many cases, our expectations were exceeded in terms of commitment, time and enthusiasm and – not least – quality of results.

Regarding motivations two indications have emerged:

- with students with a high intrinsic motivation (for example, “excellent” students) are especially important the quality of materials, language, the cooperative/competitive activities;
- if there is a lack of intrinsic motivation, it is much more effective focusing on competition dynamics, for example using prize competitions and final awards, making the most of the classroom cooperation dimension, encouraging contributions modes also very different and alternative than normally required at school (for example in the theater play the variety of activities such as writing dialogues, costumes, shooting, etc.).

As for the educational goal:

- if the main objective is to develop knowledge and skills, it becomes crucial to choose language and interactive activities, individual or collaborative, providing for the more structured materials;
- when the goal is to spread scientific culture and encourage students, it is better to use unstructured materials included into a well-designed learning path, with a prizes contest. Materials made available are important to develop curiosity and independence and to build rooted and conscious knowledge.

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## ONLINE LEARNING: VARIATIONS IN GROUPS OF PARTICIPANTS AND TOOLS

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This research explores the flexibility of an on-line science course as an answer to the needs and requirements of participants coming from three distinct and diverse groups of skilled students: honor students, student with learning disabilities and regular students. The course is part of the teachers training program for k-2 College Student-Teachers. The online course focuses on constructing a science teaching unit and is based mainly on learning scientific concepts, fostering lab skills, and on school practicing. The research implied that using online learning techniques along with simplified hands-on labs may be very effective at conveying important concepts of science learning.

The students learning and integration in the online course was examined through PRE and POST questionnaires. The pre-service teachers' learning quality was tested by four criteria that were reported by the students and the instructors. The results showed that in this online course LD pre-service teachers' learning was improved in both examined aspects: the self-directed learning level, the participation level in online forums. The LD students reported on higher 'Satisfaction Level' in labs activity, as well. The final students' grade of the online course reflects these finding, since the LD students' average final grade was the highest compared to that of the Regular and the Excellent students.

The interview answers revealed that the asynchronous learning assisted the LD students who preferred to learn in conversation groups sharing ideas and questions with their peers. The asynchronous forum which is isolated from background noise and interference, encouraged learning, mostly for students with learning disabilities. Moreover, the possibility to repeatedly hear the recorded lesson enabled the LD students to continue their learning although the lesson was over. Another important advantage of the online communication lies in the discrete platform which allows students, who are not active in the traditional class to implicitly present their ideas. The online tools allow the excellent students to finish their tasks independently with flexible time organization. The interaction in the online course can be adjusted to personal needs: while the excellent students prefer minimal educator interaction, the LD students are delighted in the intensive interaction the online course offers. The variability that the online course provides, nicely meets the different (LD students, regular student and excellent student), groups' needs.

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# DEVELOPING E-LEARNING DESIGN CAPABILITIES IN A DUAL-MODE INSTITUTION

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Higher education institutions offering open or distance learning provision alongside traditional on-campus delivery can face particular course design, development and delivery challenges. Research and innovation in one context may provide learning design benefits in the other, as well as practical opportunities to transfer innovation to practice in both modes of delivery.

The development of e-learning competences among academic staff and the provision of opportunities for active experimentation with different learning technologies are thus vital enablers in improving teaching and in enhancing the student experience, irrespective of the mode of delivery. This paper outlines the pathways followed by the University of Leicester (UoL) in developing e-learning capabilities and learning design competences and presents some of the outcomes achieved to date.

The UoL is a traditional campus-based university with a significant DL offer that is largely the result of entrepreneurial activities by individual academic departments over more than 15 years. At 1st December 2007, it had over 19,000 students, including over 8,500 part-time and distance-learning (DL) students. The UoL DL portfolio has widened considerably since 2006 by developing new programmes and expanding into new markets.

The development of e-learning capabilities was given new impetus in mid 2005 when a formal strategy explicitly addressing e-learning was adopted. This complemented the existing learning and teaching and distance learning strategies. Since then, significant change interventions have been made to strengthen further the institution's learning design capabilities, for both on-campus and DL delivery. In particular, resources were allocated to address the individual and team e-learning competences necessary at the course and module level in a number of departments offering both modes of provision. A view of the causal linkages seen between these elements is shown in Figure 1.

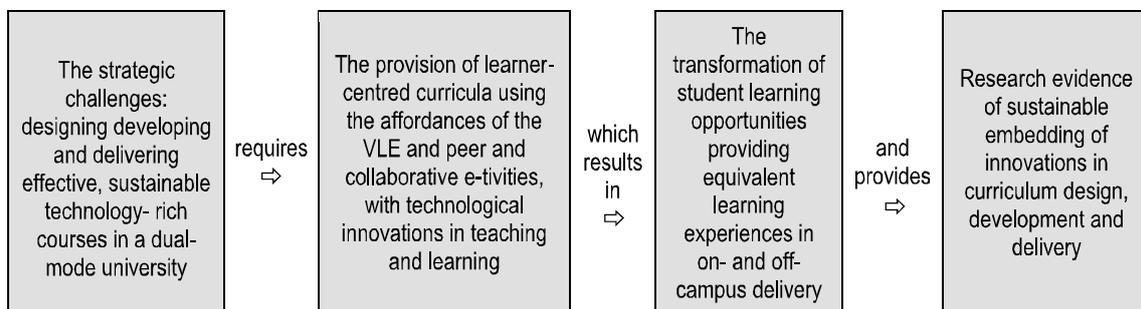


Figure: An e-learning enhancement causal effects flow.

The adoption of the UoL e-learning strategy in 2005 was followed by an audit of the institution's e-learning capabilities as a pilot project within the UK Higher Education Academy's Benchmarking programme. Further e-learning change initiatives formed part of the Academy's Pathfinder, the e-Learning Research Observatory and the Pathfinder Network programmes.

Outcomes included significant improvements in the benchmarking performance of key e-learning criteria from 2006 to 2007. Some 20 intervention workshops were held within UoL up to end 2008, involving more than 160 staff from 31 courses across 14 disciplines, and resulting in the production of over 100 newly designed or re-designed e-tivities. These have shown the key role of learning design and learning technologies in effective teaching and learning and as a major determinant of the student learning experience.

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## HOLDING UP A MIRROR TO PERSONAL AND PROFESSIONAL DEVELOPMENT: ENHANCING REFLECTIVE LEARNING IN DISTANCE STUDY

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In the history of distance education, reflection on learning has been seen as a distinctive technique for supporting formal curriculum learning (Kolb 1985). However the use of reflection has been private to the student, based on their working alone on their learning. The introduction of new media and communication however creates the opportunity for developing reflective practice in academic learning to support the development of other competencies and skills valuable in the non-academic, employment context. This paper outlines the development of innovative use of reflection in distance learning modules via use of new media through levels of study, and how its use in tertiary levels of study may link directly to students' personal and professional development outside their academic work.

Reflective practice is being developed in a graduated manner across the pathway of study using new media and social learning. At level 1 students were guided in exploring their motivation to study and their own qualities and aptitudes. At the end of the course in addition to completing formal assessment they reflected on their academic and personal development, identifying the skills they had acquired as a result of informal social process learning. In level 2 introduces compulsory formative assessment in which tutor coach students in reworking of ideas and transfer of academic skills to new situations. Students are encouraged to make choices about their study, selecting specialisations which relate directly to their own interest and knowledge base. As part of their summative work students assess the usefulness and affordances of the VLE and other new media tools they have used. Evaluation of a current Level 3 module has shown an urgent need to innovate informal reflective learning further so that students recognise and can identify the non-cognitive competencies and skills development embedded in their learning activities, and be mentored in the development of individual portfolios reflecting this. Plans are now to develop a capstone module which could serve several pathways of study, and which could fulfil this function.

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# LET THE STUDENTS TALK – USE OF CONVERSATIONAL AGENTS IN DISTANCE EDUCATION ENVIRONMENTS TO ACHIEVE ACTIVE LEARNING

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## What is an Educational Agent?

In general, an educational agent is a class of software agents that is designed to support the participants of the educational processes. Most of educational agent definitions emphasize the social context that is introduced by the educational agents. The role of educational agents is to provide not only some multimedia content, but also entire learning environment with interaction and feedback loop. Multimedia avatar representation of majority of the agents influences human perception of the content and the learning environment. Many agents can show the aspects of personality and the symptoms of emotions, some can even communicate in natural language. Several types of educational agents exist, however most authors distinguish the assistant and the tutor agents.

## WAS Agent Prototype – Assisting Learning Process

As a result of author's research a prototype of an educational agent called WAS (polish acronym for Virtual Student Assistant) was implemented at the Gdansk University of Technology. Currently it plays the role of a personal assistant helping students to search and obtain educational resources and tracking student's progress. The main task of the WAS agent is resource searching using external servers and Web services. The content is downloaded on demand, and the role of the agent is to manage a local repository of downloaded contents. The agent can check for new versions of data or wait in case a server is down. The second function of the WAS agent is to track student's activity with the educational content. The agent stores results of finished tasks and can share it with SCORM compliant LMS. The agent informs the user about resources and their status: downloaded, not used or not completed.

## Tutor Agent Prototype – Teaching by Conversation

As a result of author's research a second prototype of an educational agent called simply Tutor was implemented at the Gdansk University of Technology. It plays the role of a tutor, a subtype of an authoritative teacher and its role is to query and educate students on ecology. Conversation with the agent starts with Tutor giving a problem to discuss – the problem is chosen from one of the conversation scenarios. Conversation scenarios should be prepared by domain experts and they consist of a set of topics to discuss, each combined with questions and hints. Also a set of variations of correct answers must be provided. The Tutor asks opening questions and waits for a student's entry. Each entry is classified to be: an answer or a question. Depending on the classification an appropriate functional module is called. The role of the assessment module is to check the correctness of a given entry. The algorithm compares student's entry with a set of correct answers and gives a score of similarity – a value between zero and one. The highest score is chosen and the information is provided to conversation manager module. Conversation manager chooses one of the following actions: correct the answer, give a hint, prompt for answer or summarize. When all of the topics in the scenario are passed by the student, the agent finishes the conversation.

## Benefits from Conversational Educational Agents

There are several advantages of introducing the software agent in distance education. A good tutor or assistant agent can introduce social context into the learning environment. It can also help the student to follow the learning process and therefore reduce the threat of resigning before the task is completed. By the introduction of interaction, especially natural language conversation, and some emotional states, the learner is more motivated and concentrated on the tasks performed. Some of the benefits of conversational agents include better memorization (for a longer period of time), deeper understanding of know-how and know-why, emotional engagement in the domain of interest and the creation of proper attitudes. Construction of a credible software agent is quite complex and therefore the implementation and agent learning can last for a long time. Efficient solutions require more research, but some examples of the agents prove to be very useful already. The more student-agent conversations are conducted, the better the agent gets in achievement of the internal educational goals. So – let the students talk.

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## ASSESSMENT OF COLLABORATIVE WORK WITH EMERGENT TECHNOLOGIES

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The aim of this paper is to detail how collaborative work carried out by small groups of 3 to 4 people on the ICT skills subject is assessed at the UOC. One of the competences in this subject is teamwork in the net with emergent technologies, which is of use to students in their studies at the UOC and in their current and future employment.

This is one of the basic, cross-curricular degree subjects taught at the University. The aim is for students to gain a gradual introduction and comprehensive grasp of a UOC-specific competence: the use and application of ICTs in academic and professional settings. Students are taught to use ICTs rationally and critically, given a taste of digital technology, guided through a Virtual Project and shown how to construct and represent knowledge in the new social web (blogs, wikis, social bookmarking, etc.).

This subject is continually assessed through a series of group activities to ascertain progress in the learning process. Attaining each goal in the online project is linked to an assessment activity that needs to be understood in the overall context, as they are all linked and related to each other.

The following indicators are used to assess the different phases of the project: the teacher's quantitative and qualitative assessment, personal self-assessment, assessment of fellow group members and group assessment.

Students are assessed individually, despite the project being carried out jointly. The teacher assesses the results of the group activities and compares these with each student's individual contribution to the group when establishing the final mark.

At the end of the semester (2008-2009), a survey was conducted so that students could provide feedback on specific aspects of the teamwork and the assessment processes employed by the teachers were analysed. The results garnered show the need to take advantage of the opportunities for learning offered by emergent technologies for collaborative work and assessment tools. This article is designed to be the first step in a line of investigation to open up possibilities for continued research into the assessment of virtual teamwork.

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# USING MULTIPLE ONLINE SECURITY MEASURES TO DELIVER SECURE COURSE EXAMS TO DISTANCE EDUCATION STUDENTS

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Rick Shearer, Pennsylvania State University's World Campus, United States of America,  
Paul Walker, KRYTERION Europe*

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This paper describes the innovative application of multiple online security technologies to conduct a successful first-ever pilot of Online Secured Testing. The World Campus of the Pennsylvania State University (PSU) and KRYTERION, Inc. are collaborating to administer course exams securely and online to distance education students located in several states across the country and outside the United States. For the initial pilot, over 89 exams were administered to students in Horticulture and Physics courses, mostly in their homes, using a variety of new security technologies, including online proctoring (supervision) via webcam, Real-Time Data Forensics™ and biometric authentication among others. The combination of these technologies assured the identity of each student and the security validation of the exam scores. The study has clearly demonstrated the feasibility of secure testing over the Internet wherever students are located.

## Background

Distance education institutions have struggled in recent years to find a convenient alternative to traditional proctored examinations for their students. While instruction can be delivered to a student's home or work through the Internet, it hasn't been possible to provide reliable exams using the same technology, primarily because the security of the exam could not be assured and because it has been difficult to authenticate the identity of the student taking the test. As a result, universities and colleges have had to maintain the use of traditional examination centres with the attendant costs and inconvenience. Others provide paper-and-pencil tests sent by mail. Some distance education institutions provide unproctored or unmonitored Internet testing. They have the student simply sign an "honor code" agreement as the sole security procedure, hoping that the student won't cheat, won't share the test with others, or won't have someone else take the test for him or her.

The security issues have been severe enough that some programs have done away with examinations altogether. Of these, many use other forms of assessment including student portfolios, papers, projects and other types of student work. Of course with these methods, the same security problems remain.

The inspiration that lead to the development of secure online examinations comes from the recognition that distance education providers would prefer a testing solution that is Internet-based, at least as secure or more secure than testing that occurs normally for on-campus programs, and which allows for convenience that is so highly prized in this market.

## Pilot Summary – Penn State University World Campus

The paper provides an outline of the pilot and implementation of the Kryterion Online Proctored Exam process at Penn State's World Campus. It describes how Kryterion provides live, online exam supervisors that monitor the student during the exam and integrates a system that verifies the student across courses and exams, and tracks 'aberrant' behaviour. The paper will explain how the system works, student experiences and how the World Campus is moving forward with implementation of the system.

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# THE PEDAGOGIC IMPLICATIONS OF ONLINE MARKING

Zoe Doye, Ieman Hassan, The Open University, United Kingdom

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## Introduction

This paper summarises and discusses several different action research projects that looked at the pedagogic implications of using an online marking tool to electronically comment upon and annotate students' assignments. This online marking tool has been employed by the Open University in the UK for approximately ten years and over 7,700 tutors now use the system to mark their students' work. Thus, a substantive number of the OU's teaching staff use electronic means through which to provide distance learning. These action research projects looked at the innovative and diverse ways that tutors can use this marking tool in order to enhance their teaching in a distance learning environment.

Despite that substantive training materials have been produced by the University for both tutors and students on how to use the marking system, little research has been undertaken on the pedagogic implications for both tutors and students of using electronic means to comment and mark student assignments. This is a gap that has been identified both within and outside the University and one which these action research projects start to close.

## The pedagogic benefits of the online marking system

The reports found several benefits of the online marking system, or areas where there may be room for development, leading to further benefits. These include:

### *Improved discourse between tutor and student*

One tutor commented: 'I think the eTMAs [the electronic marking system] are the biggest single improvement...since I started. I think they do allow for more dialogue...they've helped me to be clearer and I can more closely link my comments on the actual assignment to my comments on the PT3 [comments page]'.

### *Improved feedback*

The studies looked at the use of hyperlinks and other methods of including study materials, the pedagogic impact and effect of the different methods of making electronic annotation.

### *Improved motivation*

The studies looked at the possible impact on motivation of electronic marking, and also at the possibilities that the system gave of increasing motivation amongst students.

### *Improved discourse amongst tutors via monitoring*

A study looked at the system of monitoring of tutors' feedback and grading on students' work and looked at the impact of the move to electronic monitoring and whether this improved discourse and dialogue between tutors.

### *Enhanced staff development*

Research found that the electronic marking system itself can allow further own reflection and staff development, simply by allowing a backward look at previous teaching both throughout a course and at previous years.

## Conclusion

These projects have been timely insofar as that they have helped move the discussion within the University away from the technical elements of online marking into the pedagogic realm. Although small scale, and located within a particular discipline, these projects have clearly indicated that there are a several potential benefits of the online marking system to the teaching and learning process.

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## A SYNTHESIS OF COMPETENCY REQUIREMENTS FOR ELECTRONIC CURRICULUM DEVELOPERS COMPILED WITHIN THE FRAMEWORK OF THE ACVCD PROJECT

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Over the past 10-15 years the sudden development of Information Technology and the enhanced ability to gain access to IT applications resulting from the spread of broadband Internet led to a dramatic growth of the quantity of e-learning materials and curricula designed to assist learning.

The design and development of electronic curricula and contents supporting e-learning require manifold, interdisciplinary knowledge. In addition to professional and pedagogical-psychological knowledge, the knowledge of IT is also important (also for theoretical content developers) and it is indispensable to have certain social competencies, such as cooperation, managerial skills, etc.

With the rapid and large-scale development of electronic contents, the electronic curriculum developer profession has automatically started to emerge in the work environment but due to the rapidness of processes there has not been enough time to establish formal requirement criteria for the profession. A great obstacle of producing sustainable developments is the communication deficiencies between content developer experts and programmers due to the lack of appropriate training of both groups.

The aim of the project called Accreditation Centre for VET Curriculum Developers (ACVCD) is to contribute to the quality assurance of e-learning services by establishing an on-line European centre for the certification of electronic curriculum developers and the accreditation of the institutions involved in electronic curriculum development. Apart from the certification and accreditation procedures to be created by the project a set of knowledge, skills and competency criteria are identified along which the standardisation process of the electronic curriculum development profession and the practice of electronic curriculum development.

With its products the Accreditation Centre for VET Curriculum Developers project wishes to contribute to the establishment of a European level standardisation of the profession of electronic curriculum developers and thus to the laying down of a foundation stone for the quality assurance framework of e-curriculum development in order to produce accessible, adaptable, durable, interoperable and reusable e-learning materials.

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## INVENTED FOR TOMORROW: A NEW PARADIGM FOR INSTRUCTIONAL DESIGN THE SEMANTIC INTERPRETATION

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Instructional designers can experience a disconnect between academics and their own efforts to develop effective learning support. Often it is because the language of the learning technologists makes little practical sense, particularly when the emphasis is on having the 'right' learning model – code for psychological theory. There is no clear 'right' model so Instructional design can be a very subjective 'art'. Success can be hit or miss.

By contrast the sustainable, mature on-line programmes tend to be those built on good learning content. Without top quality content there can be little guarantee that your students are really learning.

There is something comforting about content. Academics understand it, so it is key to achieving harmony between the academic and the 'technologist'. Instead of baffling the academic with talk of instructional design, talk in their terms. Talk about a *content publication* to provide reference materials, or a publication to engage students in reflection or discussion, or a publication to assess their understanding.

Publication types are a sensible e-paradigm<sup>1</sup>, the key to making best use of every input to a development, and the key to effective use and delivery of distance learning. E-learning instructional designers have one shot at getting it right. By contrast being able to derive consistent, highly flexible, delivery options from a semantically rich content base allows the same materials to be delivered (i.e. interpreted) in a number of ways. Content and semantic mark-up go hand-in-hand in getting the most out of your content.

Refuting that a publications approach is a highly restrictive standardisation tactic to follow, this paper explores and compares two radically alternative approaches to the development of content – Bricolage vs. Content Engineering – and shows how these complementary approaches are supported by publication types coupled with semantic interpretation and based on a common infrastructure.

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<sup>1</sup> An 'e' on the front of a very old paradigm.

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# FROM NOWHERE TO GLO-WARE: THE EVOLUTION OF A GENERATIVE LEARNING OBJECT

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## Introduction

The UK's collaborative Centre for Excellence in Teaching and Learning in Reusable Learning Objects (RLO-CETL) has been primarily concerned with creating, developing, sharing and evaluating high quality e-learning materials in the form of reusable learning objects (RLOs) for use in Higher Education. Over 200 RLOs have been created and evaluated and the materials were found to be very effective. However, there was a clear need for them to be more flexible, editable, adaptable and up-dateable and so the idea of a 'generative learning object' or GLO was born.

## From design to working prototype

"Unlocking content" workshops had been running nationally since 2002 and the workshop format was very effective in allowing practitioners to organise their expert knowledge in suitable forms for RLO development. A series of large (A0) poster templates had been used to help facilitate the content unlocking process and these had evolved over the years to incorporate various aspects of learning design. A series of four one-day workshops in late 2006 resulted in specifications for 20 learning objects being created and one particular design stood out as having enormous potential for adaptability. This design featured an artefact with a number of scholarly viewpoints expressed as expert views about the object. Each expert's knowledge was presented under four main topics: Origin, Purpose, Meaning and References. The team that created this design subsequently refined it and produced a more detailed specification. This was developed into a prototype GLO by a team from the RLO-CETL, in close consultation with the authors. The entire design consisted of around a dozen introductory, explanatory, reflective and assessment screens. However, the core activity, expressed in the original workshop design where the learner accesses the expert views, was the real centrepiece of the GLO and encapsulated many of the features of reusability as it was:

- small, self-contained, based on a single learning objective
- generalisable across courses, disciplines, institutions
- engaging, interactive, using multiple media
- freely available, both free of cost and free of copyright constraint
- applicable to 'difficult' subject areas, ones that students often fail to grasp
- customisable, adaptable, flexible
- made collaboratively, this engenders common ownership and encourages sharing
- based on real need – inclusion/relevance – why student input is so important.

Once the prototype GLO had been developed, the authoring team were now able to recruit the real experts to create an instance of the learning object. They chose the Altar of Pergamon (in the Pergamon Museum, Berlin) as their artefact and identified an archaeologist, a classicist and a modern historian as their experts. In the final 'run-time' version the learner is able to interrogate each of the experts and hear their views on the origin, purpose and meaning of the artefact. They are also able to record their own reflections.

## Conclusion

The evolution from an idea for a highly generic learning design brainstormed and captured in a workshop to a fully functioning adaptable GLO pattern took around 18 months to achieve. It was not a trivial process, requiring many hours of programmer time and academic subject expertise not to mention the input of a number of other stakeholders, not least importantly students. However, once an effective learning design has been set up as a GLO it is readily reusable and easily instantiated with a different version, so the advantages in productivity are very obvious. It is this ability to engage the authors in highly creative practices in order to tease out the most effective learning designs; the facility for teachers to adapt those designs to their own purpose; plus the capacity to allow student engagement with the instantiation (the delivered learning object) that transforms the whole community of practitioners into a learning community with shared values and purpose. The evolution of a generative learning object is a deep learning process in itself.

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# PERSONAL REFLECTIVE JOURNALS: ENHANCING THE SENSE OF COMMUNITY IN DISTANCE LEARNING

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## Introduction

Web-based teaching and learning are becoming an integral part of the higher education curriculum. Among the advantages of distance education, the literature mentions the emotional experiences of the distant learner – isolation and frustration – and notes a higher dropout rate when compared with conventional learning. One of the important assisting factors in promoting a successful connection between the online learner and the instructor is to encourage learners to engage in and share critical reflection and thoughts regarding the learning process. In the reported study, the metacognitive aspect of such learning was promoted by the use of personal reflective journals. The purpose of applying personal reflective journals was to help participants to combine theory, practice, and experience. These journals can assist the instructor in getting to know the students better: their expectations, difficulties and satisfaction, and to personally respond to students when needed. It can also better inform the instructor, who can provide challenges in order to better understand and assess students' work and ability, outline the group dynamics, and monitor the group's collaborative work.

The course was designed in a manner that enhances interactivity and sense of community among its members. The study was also aimed at improving the quality of teaching and learning and eventually increasing students' satisfaction and success in online courses.

## Method

The online course was conducted through an academic semester. Students were required to keep reflective journals in which they could reflect about their experiences and provide feedback on the learning process. Qualitative analysis was conducted based upon data from 245 completed reflective journals of 80 students, training to be teachers, who participated in four different distance-learning courses at an undergraduate level. Relevant information was added based on questionnaires, forums, transcriptions, emails and personal interviews.

## Conclusions

Creating an online learning community and encouraging effective learning are possible in distance education. These do not happen naturally, but require careful and constant planning and designing of the course content. It is also necessary to define expectations, provide skills for participating in and moderating discussions, facilitate the sharing of materials, and encourage building of trust and collaboration among group members.

The implementation of reflective journals assisted the instructor in sensing students' learning styles, needs and concerns, and simplifying course materials and assignments as well as adjusting and fine-tuning the online environment design in order to facilitate the development of the online learning community.

From the students' perspective, writing reflective journals was a very useful learning tool: it aided them in reflecting on the tasks assigned, sharing their feelings and experiences, and receiving individual attention. From the instructor's point of view, it was an opportunity to become better acquainted with the students, to give more accurate assessment, and to make appropriate adjustments to the course design.

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## THE DEVELOPMENT AND IMPLEMENTATION OF A TOOL FOR DIAGNOSING INNOVATION IN ACADEMIC TEACHING

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In the past two decades there has been great development in active instruction methods at higher education institutions in Israel and in abroad. The success of active instruction methods in relation to the students' involvement during courses and final examinations has been reported in many studies. In spite of this success, most instructors in the world tend to continue teaching in traditional ways. A research tool was an attitude questionnaire developed specially for the purpose of this study on the basis of the experience of the "active instructors" and interviews with them exposing the process of change they had undergone. Over the five-year period in which active teaching was developed and integrated in basic courses at our college, the active instructors were interviewed twice in each semester. An analysis of these interviews provided the basis for characterizing the attitudes of "active instructors" and subsequently for the development of the research questionnaire. On the basis of a review of the literature and an examination of the attitudes of the "active instructors", a content analysis was undertaken in which the attitudes were grouped into six key areas that can characterize the tendency of a lecturer to adopt the typical teaching methods of active teaching. These areas are:

1. Activation of a large class;
2. Student involvement in the course;
3. Independent learning ability of students;
4. Structure of knowledge by students;
5. A tendency to prefer understanding of the subject matter over full completion of the syllabus;
6. Perception of the lecturer's role in the teaching process.

This study, through a research questionnaire developed specifically for this purpose, examined the attitudes of 135 instructors in three higher education institutions about active instruction. Their attitudes were compared with the attitudes of active instructors who, for the past three years, have taught in the active instruction environment. We examined the six instruction areas and in all of them we found a significant difference between the attitudes of active instructors and their colleagues. This paper discusses those differences and expands the corpus of theoretical knowledge relating to instructors' attitudes toward active teaching, presenting a new tool enabling the characterization of these attitudes.

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## HIGH SCHOOL STUDENTS IN THE NEW LEARNING ENVIRONMENT: A PROFILE OF DISTANCE E-LEARNERS

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The relative ubiquity of computer access and the rapid development of information and communication technology have profoundly impacted teaching and learning at a distance. One of the resultant new paradigms for distance education, online e-learning, utilizes web-based ICT learning tools as the primary mechanism for mediating student-teacher communications and facilitating teaching and learning at a distance.

Online courses that integrate distance e-learning (DEL) technology tools have had a growing presence in Canada's high school system since the mid-1990s. At present, 8 of 10 Canadian provinces have developed some form of province-wide on-line DEL program for students in the Kindergarten to Grade 12 education system.

Despite the growth in the numbers of students engaged in high school DEL in recent years, relatively little is currently known about the characteristics of those students who participate in distance e-learning courses at the high school level. The available research in this area suggests that high school students who participate in DEL courses are often very academically capable, highly motivated, self-disciplined and independent. These students are more likely to be highly literate and technologically adept and planning to study at university upon graduation.

In an effort to address current deficits in the research literature, the purpose of the current study was to further elucidate the role of background, academic and socio-cultural characteristics and attributes that influence high school students' selection of DEL courses. This was accomplished using a logistic regression analysis of the results of a survey of students who did and did not participate in these high school DEL courses at 35 public schools in Eastern Canada.

Though a sizable portion (37.5%) of the 324 students in the sample did complete DEL courses in high school, a majority of the students (62.5%) did not. More females (67.0%) than males indicated that they had completed DEL courses, and more than half of students who took DEL courses had an academic average of 80% or higher (52.7%), completed homework assignments two or more days per week (87.4%), and had a positive attitude toward school (63.1%). The vast majority of distance students were confident about their ability to use computer technology (93.8%) and almost all of them were confident about their reading skills (99.1%). Most of them also expressed a fairly high degree of confidence with regard to their skills in the areas of writing (76.8%) and mathematics (63.4%). Slightly more than half (51.8%) of the distance students indicated that they were interested in enrolling in a university-level program of studies following high school.

Overall, the findings of this study are supported by the existing research literature; however, the findings are not universally consistent with those of earlier examinations of the characteristics of high school distance e-learners. Notably, there was no significant difference between the overall academic average reported by DEL and non-DEL students. Although the students who were engaged in DEL did not achieve significantly higher academic averages than traditional classroom learners, they were more likely to be completing a more rigorous academic program.

The results of the regression analysis suggest that DEL students are likely to be females completing a demanding academic program who are positively disposed toward school and not employed in a part-time job. These are students who are also likely to report feeling highly efficacious with respect to their computer and reading abilities.

Efforts to identify these predisposing characteristics of DEL students and to create a profile of their attributes are important for two reasons. A better understanding of the characteristics of students who do not chose DEL courses is useful in developing strategies to increase and diversify the high school student population enrolled in DEL. This research also enables us to better support distance e-learners and to identify those at-risk learners in order to increase their chances of success.

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## LISTENING TO OUR LEARNERS' EXPERIENCES OF E-LEARNING: A PRE-REQUISITE FOR INNOVATION

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Research into the student experience of e-learning has resulted in a growing number of reports extolling the virtues of listening carefully to our learners and responding appropriately to what we 'hear' (Sharpe, 2005; Creanor, 2006; JISC, 2008; Ryan, 2008). It is recommended that a pre-requisite of engaging in innovative uses of technology in order to enhance learning and teaching is to listen to our students.

The Student Experience of e-learning Laboratory (SEEL) project at the University of Greenwich arose from an e-benchmarking activity sponsored by the Higher Education Academy (HEA) in which it was discovered that staff within the institution believed that e-learning was employed in order to enhance the student experience. Further investigation revealed that there was little systematic evaluation of the impact of e-learning on the student experience. An opportunity to bid for HEA Pathfinder funding led to the establishment of SEEL as a three year curriculum renewal initiative to explore and then implement a number of approaches to investigate learners' experiences of using technology in support of their learning and to use the findings to inform future learning and teaching innovations.

In this paper members of the SEEL team present initial findings from a University-wide survey of nearly a 1,000 students. A selection of 90 'cameos', drawn from the survey data, offer further insights into personal perceptions of e-learning and illustrate the diversity of students' experiences. Finally, extracts from follow-up interviews with a small number of students, allow us to 'hear' the student voice more clearly.

Issues arising from an analysis of the data include student preferences for communication and social networking tools, views on the 'smartness' of their tutors' uses of technology and perceptions of the value of e-learning. A primary finding is that students effectively arrive at their own individualised selection, configuration and use of technologies and software that meets their perceived needs. This 'personalisation' does not imply that such configurations are the most efficient, nor does it automatically suggest that effective learning is occurring.

SEEL reminds us that learners are individuals, who approach learning both with and without technology in their own distinctive ways. Hearing, understanding and responding to the student voice are fundamental in maximising learning effectiveness through the innovative uses of technology.

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## THE EDUCATIONAL SIGNIFICANCE OF DIGITAL STORYTELLING

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*“In the end, folks, we ain’t nothing but a song...a story” (Joe Lambert<sup>1</sup>).*

In this contribution we want to analyze the educational significance of digital storytelling. People have always told stories, this for various purposes; for example to recall heroic deeds, for entertainment... Storytelling is often connected to an oral or written tradition; however a variety of media to tell stories can be indicated.

Today we have a wide range of digital resources with which we can create digital stories. With the discussion of the methodology digital storytelling, we want to illustrate how two apparent opposites – the human story and the digital world – can come together in an educational context. More specifically, we examine which purposes digital storytelling can support and which conditions can be indicated if we want to implement this methodology in a curriculum.

When we compare different descriptions of digital storytelling used in an educational context (see Banaszewski, 2005; Marcus, 2003; Barrett, 2006), we notice that they all stress the importance of a personal point of view. Barrett (2006) warns for the undesirable result that a digital story is reduced to a sort of PowerPoint on steroids. We define digital storytelling when used in an educational context – as *‘a methodology that challenges the student to use multimedia to tell a short autobiographical story in which he/she takes position’*. Based on an analysis of the literature we conclude that digital storytelling can support the building of an ePortfolio and support a reflection process.

The guidelines of Lambert (2003) may be inspiring by the implementation of digital storytelling in a curriculum. Digital storytelling can be classified under a meditative approach to reflect. Furthermore, we distinguish an another approach that can support a reflection process, which focuses on change of action in the workplace. The ALACT model (= Action, Looking back, Awareness of essential aspects, Creating alternative methods of action and Trial), of Korthagen & Vasalos (2002) can be indicated as an example of this approach.

The results of a survey enquiry that we conducted among 65 students in a teacher training course did not reveal that students prefer digital storytelling or the ALACT-model to make their reflection assignments. We finish this contribution with the recommendation to examine in further research which approach – the ALACT model or digital storytelling – stimulate the most a reflection process.

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<sup>1</sup> Quote of Joe Lambert, in Jakes, D. (n.d.). *Capturing Stories, Capturing Lives: The Power of Digital Storytelling*. Retrieved on June 2, 2008, <http://www.slideshare.net/djakes/digital-storytelling-quotes/>

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# E-PORTFOLIOS AS TOOLS TO ASSESS GENERIC COMPETENCES IN DISTANCE LEARNING STUDY COURSES

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## Theoretical background

Since the 1990-ies portfolios have been increasingly used in all kinds of learning environments. In the field of education portfolio usually stands for a compilation of documents describing a particular learning process or a whole learning biography. According to their purposes portfolios are classified into different types. A common classification distinguishes between developmental portfolios, assessment portfolios, showcase portfolios and hybrid portfolios.

We focus on assessment portfolios which demonstrate learners' competences for defined subject areas. In this context we discuss their suitability as tools to assess generic competences in university distance learning study courses with a good deal of e-learning. The relevance for this discussion results from the following context: in general study courses integrate two partly contradictory functions for society: fostering learning and selection for careers by providing degrees. As part of academic competence goals and according to their increasing demand of the labour market generic competences gain importance in an academic context. Consequently they need to be integrated into the assessment process. But the assessment of generic competences requires new sophisticated assessment tools. That is especially the case for e-learning environments, where generic competences are not easy to integrate.

We define generic competences as domain-unspecific competences and refer to the competence model used in the context of the Bologna-process. Generic competence-categories differentiate between social/communicative competences, personal competences and activity-oriented competences. We assume that fostering generic competences requires a combination with domain-specific qualifications. Furthermore in order to get proficiency (transfer to a particular field of work) practising over a period of time is important. In this context the chance for self-reflection and improvement of learning should also be given.

## Implementing assessment e-portfolios in distance learning study courses

We developed a design for implementing an e-portfolio into one of our master courses. In this context different questions arose: which conditions need to be fulfilled to make the implementation of e-portfolios into distance learning study courses notably meet the above mentioned requirements to foster and assess generic competences? How and when should performance be assessed during portfolio-learning?

The following deliberations were crucial for our development-process:

- combination with a domain-specific qualifications training by embedding the e-portfolio into a domain-specific module,
- time period of two month of time to provide the chance for the improvement of competences through self-reflection and external feedback; introduction of a learning diary and a feedback-loop,
- evaluation at three different times during the two month; increasing complexity of learning tasks,
- assessment of different product-types (individual tasks, group-tasks) to provide flexibility, as the acquirement of generic competences arises in different situations while transferring them on domain-specific subjects.

## Further considerations about the assessment of competences through e-portfolios

Assessment portfolios should lead to a certificate with an overall grade, which is composed of the different product assessments. In this context it is important to meet a number of quality standards like objectivity, reliability and validity. Therefore it is crucial to define assessment criteria in advance – e.g. content-related and formal requirements. Furthermore a frame for the weighting of the different competences (learning tasks) needs to be defined. These requirements should become transparent to the students by providing them with a list of all important criteria as well as with information about the weight of the different tasks.

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## DIGITAL, SOCIAL AND CIVIC COMPETENCES, KEYS FOR TALENTED LIFELONG LEARNERS

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In this paper, current trends are explored in cross-cultural talent development by using a number of key competences for the digital age as a contextual framework. The paper discusses the dynamics that are inherent in the digital workplace and also considers the different needs that lifelong learners (including learners with disabilities) may have in developing their key talents. The paper posits that enabling talents is driven by both technological and multicultural realities of the 21<sup>st</sup> Century.

Talent is considered here in the context of lifelong learning, where talented people of different ages are motivated to get the most out of their learningful journey of, life, study, work and leisure. Study, work and leisure are inclusive elements of the same journey towards human fulfillment and thus talent enabling. 'Talents' operate in an online interconnected multicultural world. Therefore, schools and workplaces need to facilitate lifelong learners to enhance their talents and enjoy their ambition.

The European Commission (2006, p. 10) recommends a number of key competences for lifelong learning. These include digital competence, communication in foreign languages, awareness of cultural issues together with social and civic competences. The boundaries between e-learning, e-work and cross cultural communication in the modern workplace are becoming blurred. The talented lifelong learner is keen to enhance his/her potential in a multicultural and high-technology environment and he/she sees the internet and its various applications as an increasingly crucial interface in enabling and growing that talent.

In conclusion, the paper recommends more comparative research, accelerated by a sense of urgency to achieve inclusion and enabling of talents in an online, multicultural context. The future question is not *if* but *how* learning organisations can facilitate 'talents' to acquire the necessary inclusive competences, like digital, social and civic competences, to participate with success in our complex world. Both digital and social/civic horizons need to be explored further in an inclusive manner. This will enable younger generations to fully integrate online social networks in their everyday lives. New innovative learning dimensions are being identified every day. In a few years from now these multimedial options will become required inclusive competences and will be applied in a flexible way by our best hope of the future, namely young talented learners worldwide. There is an ethical responsibility for educationalists, policymakers and employers to enforce the key competences of lifelong learners. The talented lifelong learner in any country – no matter what economic, social or disability background - has the civic right to gain access to a good quality online learning environment. It is vital that learners with disabilities are afforded the necessary tools to engage effectively with others in the public domain and to enable "critical and creative reflection and constructive participation in community or neighbourhood activities as well as decision-making at all levels, from local to national and European level" (European Framework, 2006, p. 17). Meeting these targets forms an integral part of the Lisbon Strategy with key emphasis on not alone meeting economic targets for 2010, but also endeavouring to ensure greater social cohesion as part of this process (<http://ec.europa.eu/education/policies/2010>). Nonetheless, achieving social inclusion continues to be a major challenge across Europe. A number of frameworks have been designed to ensure that social cohesion becomes a reality. This is particularly evident for access to education, with EU policy focusing on the need for greater levels of inclusion, and equal opportunities for all its Citizens. The *2007 Lisbon Declaration – Young People's Views on Inclusive Education* outlines proposals to facilitate greater inclusion in schools, with 'special education needs' identified as being one of sixteen core indicators as to achieving benchmarks in education and training. (European Union, 2008, p. 133). Future success depends on creating an environment in which talents can realize their full potential and enjoy their ambition.

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## EVALUATING CONTINUOUS ASSESSMENT QUALITY IN COMPETENCE-BASED EDUCATION ONLINE: THE CASE OF THE E-FOLIO

*Alda Pereira, Isolina Oliveira, Luís Tinoca, Lúcia Amante, Maria de Jesus Relvas, Maria do Carmo Teixeira Pinto, Darlinda Moreira, Universidade Aberta, Portugal*

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The pedagogical model, in use at Universidade Aberta since 2007, is based on four cornerstones: student-centered learning, flexibility, interaction and digital inclusion, aligned with the key competences required for learners in this knowledge-based society. The cornerstone of digital inclusion is particularly important in the context of a fully virtual learning environment such as the one offered at Universidade Aberta. In this way, the University is promoting the development of competences in the use of information and communication technologies.

Within this context, a new research unit was created at the University, the Distance Education Laboratory (LEaD – Laboratório de Educação a Distância), aiming not only a close monitoring of the Pedagogical Model but also applied research on online methodologies. Specifically, the current project intends to identify strategies that promote the students' learning and success, with a special concern with the development of instruments and approaches to continuous assessment, targeted at the promotion of specific competences. Furthermore, it is focused on assessment issues, namely the two main types of instruments (e-folios and p-folios) used in undergraduate fully online courses at Universidade Aberta. The research work developed by the team, whose members produced this paper, was particularly focused on the e-folio which

- is a short digital document;
- should clearly demonstrate the student's acquired or developed given competence;
- may include a critical reflection about the student's own learning, or a report about field work, or a problem solving activity, or a reading review, or the production of an artifact.

Two main research questions were therefore asked, as a basis for both the whole project and this paper:

- What relationship is there between the concept of competence being used in the e-folios and our current working definition?
- What are the main characteristics of the e-folios?

The research is based on the analysis of a pool of 35 e-folios collected within a sample of volunteer teachers, representing seven different scientific areas (education, languages, culture, literature, natural sciences, economy, and documental sciences), preceded by a group discussion and clarification period around the concept of competence, and followed up by the creation of an analysis grid centered on the following criteria: the course competences; the e-folio competences; types of competences; the assignment; types of task; assessment criteria; instructions; resources; timetable; and structure.

From the analyzed e-folios, it becomes clear that the assessed competences were all framed by the concept of competence assumed by this research group, although they are not always presented with a clear formulation; it also becomes clear that the most valued type of competence was "problem solving", with a recurrent use of textual based resources, and that there were several interpretations of what an e-folio may be.

The sharing of these preliminary results may assume a relevant role for the teachers who are currently using this new tool, or will be in the future, in order to promote a reflective analysis about their own assessment practices. The current project is therefore a work in progress, while this paper tries to summarize and register the work of the research team for the last 15 months.

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## INTER-CULTURAL COMPARISONS OF STAFF PERCEPTIONS ON QUALITY IN ONLINE DISTANCE LEARNING

*Mark Endean, The Open University, United Kingdom, Bai Bin, The Open University & Beijing Normal University, China, Steven Swithenby, The Open University, United Kingdom*

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As online education has become firmly embedded in the international higher education landscape, considerable concerns and problems have arisen all around the world, particularly in relation to the quality of this mode of instruction. However, 'quality', like 'freedom' or 'justice', is an elusive concept. People all have an instinctive understanding of what quality means but they find it difficult to articulate. Quality is a value-laden term: it is subjectively associated with that which is good and worthwhile. But that means that people from different social and culture backgrounds are likely to have different views on what constitutes quality. This in turn is likely to impact on the form of online education that will be acceptable in a particular location.

In order to provide online education that is effective in different contexts, more needs to be known about this diversity of attitudes to quality. This research aims to identify and explore the perceptions of quality among distance education professionals and is a collaborative work between UK and China. We intend to find out staff conceptions and perceptions on quality in online education and the critical factors to ensure quality in the two countries. The UK Open University (UKOU), Chinese Central Radio and Television University (CCRTVU) and a number of Chinese online colleges are providing the case material and the practitioners around which the study is based.

The study has initially involved face-to-face, semi-structured, in-depth interviews with 15 interviewees. The participants were all staff members of the UK Open University. The role of each individual may be critical in their view of quality in online education. We therefore decided to categorize the groups of interviewees as a basis on which to analyse their responses. Information was gathered about each individual's role in the UKOU, subject background, duration of employment and gender. From this the following groupings were formed: central academic staff, academic related support staff, staff tutor (regional academic manager) and associate lecturer (tutor). This organizational principle has subsequently been used to choose interviewees in Chinese online institutes. We have now completed ten interviews in China and the initial observations about perceptions of quality has shown up some interesting contrasts with those obtained from the interviews in the UKOU.

### Contrasting perceptions of quality in online distance learning in the two locations

In the UK, the Quality Assurance Agency for Higher Education (QAA) provides independent assessment of how higher education institutions maintain their academic standards and quality. So the UK Open University belongs to the same assessment and funding system as other, conventional universities. The UKOU regards the range of standards and guidelines from the QAA as important quality references and uses these to ensure that the quality of the University's programmes can be directly compared with those from all conventional UK universities. Interviews show that most of the UKOU's staff perceive quality as a measure of "fitness for purpose". They identify the critical factors in the quality assurance of online education as the processes and procedures governing course development, student support, assessment of student learning and effective interaction with learners.

In China, the online education system is composed of CCRTVU, and online colleges which are affiliated to key national universities. Online learners are adults in employment. The quality standard is different from conventional Chinese universities. In our interviews, the quality perceptions of staff in China are different from their UK counterparts. The perceptions mainly focus on the *two* factors of "fitness for purpose" and "value added". Most staff feel that it is inappropriate simply to compare the quality of online education with that obtained from a conventional university. Quality, they suggest, lies instead in the degree of personal and professional development that will have been achieved by a student from enrolment to graduation. And the critical factors of quality assurance are course development, student support, the learning process, assessment and feedback, and staff development.

The underlying reasons for these differences in perception are being explored with the aim of establishing whether they can be reconciled in common frameworks and benchmarks that recognize the different social contexts within which the institutions are operating.

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## WIKIPEDIA IN UNIVERSITY TEACHING – OBJECTIVES AND RESULTS OF ADOPTING COLLABORATIVE TEXT EDITING ASSIGNMENTS

*Frank Schulenburg, Wikimedia Foundation, United States of America, Klaus Wannemacher, HIS GmbH, Germany*

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Since 2001, the free multilingual encyclopaedia project Wikipedia has become one of the most popular websites and web 2.0 applications worldwide. Even though the use of open contents and encyclopaedic information as provided by Wikipedia has caused significant problems within the scientific community (e.g. the quality management or the plagiarism problem in term papers) and many instructors discourage students from using the free online encyclopaedia for their academic work, Wikipedia has evolved into a general reference website. The founder of Wikipedia, Jimmy Wales, subsequently anticipates considerable changes of the academic learning culture in the digital era in accordance with a constructivist teaching and learning paradigm. He presumes that “teaching at universities will change, that professors will become mentors accompanying the development of their students” and that students will predominantly “discover the world independently following their own interest.” Corresponding to these didactic assumptions, Wikipedia has increasingly facilitated and contributed to processes of self-contained learning and knowledge construction at universities.

### Analysis of International Field Reports on Wikipedia Use in Teaching

The participatory character that has been regarded as a weakness of Wikipedia pertaining to its scientific validity by some is perceived as a specific didactic quality by others. In particular the strong appreciation of students for Wikipedia prompts a growing number of instructors to apply the online encyclopaedia for teaching purposes. Prolific ways of integrating and actively using Wikipedia for teaching have been applied at universities worldwide. Challenges and opportunities of actively integrating the new online publication culture into teaching through the form of Wikipedia assignments are portrayed and analysed within this paper. The English Wikipedia’s “school and university projects” page specifies some 92 genuine Wikipedia projects at international universities carried out in 18 different countries between 2002 and 2009 (reference date: January 15, 2009), among them projects at the Ivy League universities Columbia, Cornell, Dartmouth, Harvard and Yale, and at the Massachusetts Institute of Technology. Based on this comprehensive list of university projects, different types of Wikipedia in seminar room projects will be analysed.

### Benefits and Challenges of Collaborative Text Editing Assignments

As the English Wikipedia’s compilation of seminar reports proves, university instructors successfully use Wikipedia in different subject-related contexts. Under the didactic proposition of an active self-organisation of knowledge, the online encyclopaedia constitutes the basis for communicating educational objectives such as fostering good narrative and research skills, strengthening the competency to assess and differentiate between diverse source materials, or making the research processes through which scholarship is produced transparent. Instructors apply Wikipedia in seminars as the basis for diverse work assignments such as article comparison, the discussion and review of specific encyclopaedic entries, or the complete or partial revision of selected articles as a precondition for student performance records. Further aspects of adopting Wikipedia in university teaching are covered as well such as considerations on seminar preparation, warm-up assignments, or mutual feedback, documentation, and seminar reflection practices. Finally, advantages and disadvantages of seminar use of Wikipedia are summed up with reference to the English Wikipedia’s international seminar reports.

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## SMALL-GROUP COLLABORATIVE LEARNING ACTIVITIES IN LARGE-GROUP WEB-BASED COURSES: EFFECTIVENESS, EFFICIENCY & SUSTAINABILITY

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Technology-enhanced online learning is facing a paradoxical situation. On the one hand, the technologies now available allow for the planning and implementation of learning experiences that allow for greater levels of interactivity than is common in classroom-based courses. On the other hand, the use of these technologies represents an added cost, especially in terms of teacher/facilitator workload, which must be reduced or recovered in order to allow these new interactive distance-learning environments to be sustainable over the long term. In order to resolve this paradoxical situation, there is a need to find ways to

1. automate the process of assignment of students to small collaborative study groups, while at the same time replicating the pedagogical bases upon which an experienced teacher of a given subject might make such grouping decisions;
2. organize the student-teacher interaction process in a manner that reduces teacher time expended per individual student, while at the same time maintaining, or even enhancing the amount of individual attention and feedback that each student receives from the teacher;
3. monitor and evaluate the learning process in a manner that allows for intellectual interaction and collaboration by all participants, while at the same time generating evidence-based data that useful and transferable learning outcomes, including critical thinking skills, are being developed;
4. integrate these micro-level tools into a system of course implementation and management which, while delivering the promised educational benefits derived from small-group collaborative learning, may allow one to scale-up courses and programs to macro-proportions.

The authors of this paper are part of a group of researchers who have been investigating such issues, not only recently, but also in earlier studies which anticipated the pedagogical and management issues involved in large-scale use of electronic communication media. Many pre-Internet-age studies produced research results and theoretical models which continue to be of relevance to today's high-tech education. We describe in this paper just one strand of such pioneering work, initiated in the UK about 40 years ago, by a multidisciplinary team of researchers interested in the automation of interactive learning activities in subject areas where there are not necessarily right and wrong answers, but rather viewpoints to be defended, and where the problems to be solved are ill-structured. This group invented a methodology which they called "Structural Communication".

The present authors have adapted aspects of this methodology in order to create and study a number of tools which address the four above-mentioned needs. The studies reported in this paper include the use of vector algebra to calculate how close the understanding of a complex issue by one student is to that of another. Having defined the vector-distance between the viewpoints on an issue, it is possible to automatically form small groups composed of members who have either similar or opposed viewpoints. It is also possible to measure changes in opinions on an issue in an evidence-based manner, without tending to force the students to converge on a predetermined expert opinion, as often occurs in automated learning. Current use of such automated discussion exercises, with cohorts of up to 4,000 students divided into small groups, seeks to augment the level of interaction and individualization experienced by the participants, while at the same time reducing the instructor/ tutor/facilitator workload by up to 70%.

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## ONLINE LEARNING COMMUNITIES – COMMUNITIES OF PRACTICE AND THEIR RELATION TO EMERGING NET CULTURES

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The traditional “transmission model” for education and learning is now being replaced by new models, or rather, by a new paradigm of education that fits well to the use of IT and the Internet, supporting a development of peer-to-peer communication. The creation of communities could be seen as a part of this development – the “take over” of the Internet by the users.

The learning process created by learners with appropriate management in a community, could be seen as an ongoing continual process and within collaborative learning settings there is a need to focus more on the processes involved in successful peer interaction, rather than just on learning outcomes. Here is a change in focus from the result to the process itself. But, the learners must be provided opportunities to understand why and what they are doing, and understand the result of the process. Understanding comes through one’s own discovery of phenomena and their relations. The learner achieves understanding when he or she takes part in defining the problems as well as trying to find a problem-solving method. The organisation of learners in communities is therefore a part of learners’ learning how to function in a team, and how teams can co-operate.

Taking into account numerous societal changes one objective for learning and education programs is the increase in the learner’s self-confidence, communication skills and creativity. Our approach is that the learner will learn how to learn through

1. an ability to work with others, including people from different cultures, to discuss and implement new ideas and forms of organisations,
2. emphasised integrated problem-solving, through an ability for problematisation and creative capacity for complex problem-solving,
3. an ability to solve complex problems that require integration of social, economical, environmental, legal, and technical factors.

The online learning community is defined as a learning atmosphere, a context providing a supportive system from which sustainable learning processes are gained through dialog and collaborative construction of knowledge by acquiring, generating, analysing and structuring information. By sustainable learning processes we thus mean an ongoing constant activity in the community that inspires and stimulates a continually ongoing learning. For the community to be effective the members must be able to communicate effectively with each other, to debate and to reflect. Collaborative learning in communities involves collaborative skills. The skills that are especially important for co-operation are communication skills, particularly those in building and maintaining trust. During the study process in the community, the learners further develop certain skills or proficiency, important for the sustainability of the learning process.

Emerging net cultures, comprehensive development of learning communities and Communities of Practice (CoPs) cause the development of a new movement, Personal Learning Environments (PLE) which allows users to create their own learning environments with multi-functionality. How can, then, CoPs for PLEs – or vice versa – be constructed and combined as supporting learning systems for Professionals? The link between Emerging Net Cultures, Learning Communities, CoPs and PLE is informal learning. In Emerging Net Cultures, an informal and everyday learning takes place, through exchange between the participants, information processing and navigation on the internet. Although individual skills development is mainly an informal affaire, it is given little or no significance. The more important the CoPs may be for individual’s development, the clearer becomes the problem. It is a resource that should be made visible and methods should be developed where the participation in informal learning environments can be the basis for individual’s qualifications.

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## GROUP TUTORING AS A QUALITY RESOURCE IN HIGHER EDUCATION BY MEANS OF E-LEARNING

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The European Space for Higher Education indicates the importance of linking university training to the professional world and defines a new frame of professional competencies tied to the new formative priorities that our students must acquire or master in order to be prepared for the labour market needs.

In our project we consider that e-learning has a decisive role from two perspectives. On the one hand, in the process of innovation in the universities, since it allows for the design and incorporation of educational innovative interventions during the teaching/learning process, both initially and during the professional life of an person, and, on the other, in the acquisition of new competencies.

In this sense, e-learning can generate a number of different centres of application in Universities and it becomes a new didactic tool of invaluable service to teachers which, in addition, tries to increase the scope and the quality of university services.

Tutorial action in higher education has been the subject of several international studies. Many authors believe that the tutorial action in higher education should be a core element of the teaching-learning process aiming to help optimize the training of students and their employability as graduates.

We understand tutorial action primarily as a resource for students to receive a personalized assistance which will assist them effectively in the planning of their future training itinerary and the optimization of their academic performance.

This research project, designed from a quality perspective, aims at describing the advantages of using peer group tutoring in the Teacher Training degree as a teaching strategy for the command and assessment of learning.

We will also try to identify the most common difficulties encountered during the implementation of this tutorial action experience. In view of the data, different lines of action are developed in order to solve the problems detected and to make the tutorial role an element of educational quality in higher education.

In the results, the students consider as a very important asset the tutor's command of the subject contents, his/her understanding and patience, especially when planning activities and explaining and clarifying the different aspects of the project.

The students pointed out in nearly all the teaching units the following benefits: feeling supported when making decisions, acquiring methodological techniques, being more up to date in regards to job opportunities, companies or other alternatives for training, learning and mastering study skills and teamwork, acquiring technology skills, and so on. As for the difficulties encountered during the experience, they point out the difficulty in adapting to new methodologies.

Knowledge based society demands new learning process tools. These one have been given by different international organisms. New technologies offer several opportunities to develop them specially in educational field, but at the same time there are some risks that may occurs if you do not use the appropriate pedagogical virtual models or e-learning. Considering the international demands, it sets tutor's descriptions in virtual pedagogical spaces or e-learning. It has also considered the communication between a student and the tutor.

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## NEW COMMUNITIES – NEW SPACES AND NEW WAYS FOR LEARNING

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European policies for education and training recognize that lifelong learning plays a crucial role in contemporary society where jobs and the required skills are changing. New ways to support, value and acknowledge learning are needed in order to provide high-quality learning opportunities for all to in order to foster skills for innovation and lifelong learning. Learning opportunities should be provided for people in their many learning and living settings, at home, school, work and community. Therefore, the increasing importance of online spaces and networks in people's lives should be considered, as they enable new ways for people to take part in emerging communities and to connect, share and create together. In view of this, the Institute for Prospective Technological Studies launched a project with DG EAC to study the innovative approaches to learning that are emerging in these new ICT-enabled networking settings.

A great variety of online networks and communities are emerging, which can be approached according to the major drivers for participation – i.e. a joint objective (task, product), a common interest/situation (topic, profession), and social connection. These drivers can be supported in an interconnected manner in different online collaborative settings. Some online communities are driven by an organizational setup (educational institution, workplace, associations), while others connect and invite members horizontally in an open manner. Though learning is not often mentioned as an explicit goal for participation in online collaborative activities, research shows that people do actually learn in these environments. The present study gathers that ICT-enabled communities offer:

- different ways to learn (through discovery, participation and doing, and new opportunities for reflection),
- a different social environment for learning (with active peer support, apprenticeship and situated learning with experts, social acknowledgement of learning, social knowledge management), and
- new ways to access and organize learning (by applying community models for courses, organizations, and linking external networks and communities to education in new ways).

ICT is crucial for online communities, as it allows them to form and provide specific affordances for learning by enabling new ways to encourage reflection, experimentation, and creativity. It supports a social experience which is different from face-to-face settings, and provides tools for personalising learning paths and knowledge management. Furthermore, ICT provides new ways to gather and follow (tacit) knowledge demonstrated in online activities.

The study shows that online communities can facilitate the acquisition of all the key competences for lifelong learning. However, if people are to start participating in ICT-based social learning approaches, they must have the necessary interest, knowledge, tools and skills (both in terms of digital competence and skills for self-regulated learning), and these initial barriers constitute a major challenge. Students should be prepared for knowledge sharing and meaning making in online settings in order to be able to use of them for lifelong learning. Educational institutions could also benefit from linking with expert communities and learning from the approaches which motivate people to learn, and to learn efficiently. Professional communities for teachers could help them to change their role and develop new practices. Regarding policy objectives, it is suggested that

- online networks have potential to be a key tool for the desired lifelong learning continuum,
- online networks can be used for learning relevant knowledge, skills and competences for future jobs,
- collective online spaces provide creative and innovative potential for learning by individuals and for the development of educational institutions, and
- online learning opportunities provide new potential for equity but also the risk of increasing divides.

It is important that educational institutions find ways to learn from these new learning approaches and settings in order to bring about their own transformation for the 21<sup>st</sup> century, becoming systems that support competence building for new jobs and personal development with a learner-centered and lifelong perspective.

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

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# WIKIS AND BLOGS: COMBINING SOCIAL SOFTWARE TOOLS TO CREATE COLLABORATIVE AND REFLECTIVE LEARNING SPACES

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For a few years teachers have used wikis, blogs and other open architecture Web tools to encourage student interaction (Richardson, 2006). Wikis can promote collaborative learning, and serve as repositories for user generated content (Wheeler et al, 2008). Blogs can encourage greater reflection on learning and enable students to enter into dialogue on specific topics (Kop, 2007). Wikis form a part of a community space, whilst blogs are situated within an individual's personal space. Interest is growing about how social software tools can provide added value to the learning process, and this is reflected in the growing literature on the topic. Less is known about how wikis, blogs and other Web 2.0 tools might be combined to create dynamic new learning environments. In this paper, Web 2.0 tool combination is explored, with reference to two case studies of recent initial teacher training programmes where blogs and wikis were blended to create new virtual learning spaces. Students offer their views about using these tools, and reflect on the strengths and weaknesses of this approach. There is also discussion about aggregation of content and a theorisation of how community and personal spaces can create tension and conflict. A new 'learning spaces' model will be presented which aids visualisation of the processes, domains and territories that are brought into play when content and Web 2.0 tools are mashed up within the same space.

## Wikis and collaboration

Research into wiki use in formalised learning settings reveals that students enjoy using them as they engender a sense of ownership, and they enable students to discuss their ideas in close proximity to the digital artefacts they are creating (Richardson, 2006; Wheeler, et al, 2008). Students are less keen for others to edit their work, and need encouragement to move from solo engagement to learning as a member of a community (McConnell, 2006).

## Blogs and reflection

Blogs are particularly useful in formalised education settings to facilitate reflection on learning. Reflection on practice can encourage teachers to change their attitudes or values (Bolton, 2006). Further, reflective practice can encourage students to write imaginatively and has been shown to encourage more accurate and critical methods of articulation (Bold & Hutton, 2007).

## Combining tools and mashing content

The ability to combine tools is a recent innovation and is a concept that has been discussed previously (Boulos et al, 2006). The pedagogical uses for aggregation tools are not immediately apparent, but with a little creative thought and planning, distance educators should be able to exploit this tool to generate useful digital repositories for learning and encourage innovative new approaches to learning.

## Conclusions

Wikis and blogs have distinctly different learning applications, which generally match their functionality. Wikis can be centralised repositories of information and one-stop-shops for group communication. Both tools were used for communication purposes, but the communication modes were qualitatively different. It is yet unknown the extent to which the overlap of blogs and wikis can create a climate within which students can negotiate meaning and construct knowledge, but from observation of learner engagement during the classroom teaching sessions, it can be deduced that students did manage a form of collaborative construction of knowledge using the two tools. The means through which a similar approach can be achieved by remote, separated students will be the subject of future research.

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## UBIQUITOUS (AND) SOCIAL LEARNING: WHERE IS THE POTENTIAL FOR INNOVATION?

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*In today's society individuals and organizations are confronted with an ever growing load and diversity of information and content, and with increasing demands for knowledge and skill... have to find new ways to acquire, contribute and exploit knowledge, and thereby learn (7FP-ICT Cooperation – Obj4.3). As humans are continually developing socially, it is not surprising that they continue to learn throughout their entire lives, through: formal, non-formal and informal processes; cognitive, experiential and emotional dimensions; very diverse patterns and practices and "practicum"; individually and socially based contents, places and contexts. PLE, social based and informal learning, eLearning 2.0, connective and adaptive learning represent innovative approaches (and to some extents still experimental) which effect the building of a new learning culture and processes into practice. An approach respecting the fact that people learn differently is to use the most basic of all human teaching methods: that is learning by interactive, non-linear and informal processes. At the same time, life long learning' policies and practices are sustained by a variety of diverse delivery channels, such as digital television, satellite, mobile, that integrate or substitute web based solutions according to learning needs and styles as well as to digital divides issues. The combination of digital convergence, social software and eLearning 2.0 open new set of research issues and opportunities within learning innovation.*

This paper addresses two main research issues related to innovation and creativity enhancement. The first one refers to the innovation empowerment within ubiquitous learning scenarios; multichannel and multimodal training systems, integrating web with mobile and digital television solutions are changing individual, organisational and social learning opportunities and relative processes' features. It is not just a matter of exponential technological channels but, indeed, a need for innovative methodological frameworks in designing, implementing and evaluating learning processes and outcomes. The second one refer to the emerging need of rethinking the evaluation framework for measuring collaborative vs. connective learning, with special focus on qualitative analysis of social learning. By their nature, the social networks allow an educational and informative use on large-scale and highly dynamic. The use of social networks is becoming increasingly relevant for the number of users and for the quality of available tools. Individuals are increasingly learning to learn, putting themselves in a more centred position within the learning processes. Individual-centred learning processes and systems have been shown to motivate, engage and inspire learners.

This is done by analysing existing multidisciplinary research contributes and projects' evidences for each area/domain in order to better focus main emerging patterns so that contribute to the main question: *how to use existing and emerging technologies to create new value for learning?* Whereas multichannel and web 2.0 applications on one side and technological/pedagogical dimension of e-Learning on the other side have already been studied to a relevant extent, there is a need of filling in the research gaps on defining new evaluation frameworks that can give account of the valued added for individual and societal learning processes. Increasing experiences and products can exploit the potential of online social networks; however, it must be noted an excessive fragmentation in the solutions adopted, which often show serious weaknesses in the effective usefulness (perceived) usefulness and meaningfulness of knowledge, experiences and practices shared within social networks.

Consistently with the progressive shift from taxonomic learning management system to technology enhanced learning perspective, the evaluation should focus the impacts on individual, organisational and societal learning processes (and their dynamic interrelations) and on their potential in enhancing committed learning (and participative) learning processes, valorising their multidimensionality (cognitive, experiential, emotional). Innovation is not related to the specific learning tool/system but, indeed, to the positive impact on the multidimensional learning process (cognitive, experiential, emotional) and on the empower social sharing and building of knowledge. In this sense, innovation in learning is strictly linked to perceived usefulness, active commitment and individual empowerment of participation in building its own development as well as in participating to social development.

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## SMALL GROUP COMPUTER-SUPPORTED COLLABORATIVE LEARNING

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Computer Supported Collaborative Learning (CSCL) is in the spot light for the last decades. Many papers were written about CSCL especially regarding integrating CSCL in formal studies. Some critics addressed the anti social aspect of distance collaboration. On the other hand, many creative activities and a wide range of applications were suggested and implemented.

In this paper we introduce a novel approach to CSCL for small life-long learning groups to improve and enrich the learning process. Our model integrates Face to Face (FTF) with Computer Supported meetings, facilitated by a generic platform which adapts easily to changing requirements specified by the group members. The main purpose is to overcome several inherent biases of FTF meetings and allow the necessary freedom for team members to express themselves both on the subject matter as well as the learning style.

We tested the added value and level of satisfaction of participants compared to their regular practice. We conducted anonymous 20-minute CSC brainstorming sessions with two different groups. The members of first group do not meet on a regular basis, and some of them do not know all the other members in person, while the members of the second group meet on a regular basis for life long learning activities. The sessions were synchronous and anonymous, and they were followed by an electronic survey. We analyzed the contribution rate and satisfaction of the individual group members and found some differences between the groups.

### Adaptive Computer-Supported Collaborative Model

We suggest an integrated novel Computer-Supported Collaborative (CSC) tool that can be configured to support different types of collaborations and specific group's preferences. To increase learning effectiveness, the group can determine several features, such as: level of anonymity, synchronicity, session duration and contribution exposure. The CSC model is composed of 3 major components: Input (group members and their preferences), CSC tool (user interface and back end server) and Output (list of contributions sent by the group members during the session).

### Results

The number of contributions per minute in both groups ranged from 1 to 9 contributions. The average number of contributions per participant in the first group was 12 (ranging from 1 to 24 contributions); in the second group the average was 11 (ranging from 3 to 18 contributions).

Most of the participants of the first group claimed that they are indifferent or even prefer expressing themselves in writing over verbal expression. Most of the participants in the first group said that under anonymity they did contribute thoughts they would not have contributed otherwise, while in the second group all participants claimed they were not affected by the anonymity. Concerning the number of contributions, only a few participants claimed that under anonymity they participated more than they would have otherwise, and 1 participant even said she participated less. All participants from both groups agreed that the group size should be fewer than 14. Most of the members of the first group claimed that previous acquaintance with the group members is meaningless; while in the second group most of the members thought that previous acquaintance is important.

Half of the members of the first group thought that a 20-minute session is adequate. On the other hand, in the second group almost all participants claimed that the session was too short. All participants in both groups claimed that they read at least some of the contributions. The reasons for not reading all the contributions were: time constraints and distraction. Most of the members in both groups claimed they learnt something new concerning themselves. Among the understandings that the participants stated were: "I was exposed to the limits of my tolerance to the ideas of others", "I was surprised to discover the fluency of expressing myself in writing", "The session helped me clarify my opinions", "I was surprised with my obsessive need not to read every word written by others", "I learnt that I was comfortable being anonymous and felt that the pressure of contribution was alleviated".

We strongly believe in integration of several studying methods to enrich the learning experience. We plan to perform additional CSC brainstorming sessions in order to identify more parameters to raise the level of satisfaction of participants compared to their regular practice.

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## DEPLOYING BROADBAND-BASED INFRASTRUCTURE AND E-LEARNING SERVICES TO ENHANCE SOCIAL NETWORKING AND TEACHERS PROFESSIONAL DEVELOPMENT IN REMOTE RURAL SCHOOLS

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State-of-the-art widespread ICT networking tools and platforms have the potential to enable individuals to enhance their social networking, and in this way, potentially also enhance their learning. Groups at risk of exclusion may benefit from such technologies by getting the means for connecting themselves to public services, learning and civic engagement. The Rural Wings project aims to investigate the potential for enhanced lifelong learning offered by social networking tools and platforms to those living in geographically and socio-economically disadvantaged rural areas. Experimental learning approaches are developed and implemented, examining the potential offered by these new trends and tools for the alleviation of the disadvantage suffered by such populations in Europe through the enhancement of opportunities for effective and meaningful lifelong learning. The project brings together and further develop content, services, pedagogies and practices for social lifelong learning in rural areas, formulating specific scenarios of use of social networking tools and platforms which are tested with real learners and their teachers in disadvantaged rural areas, and evaluated in terms of their impact on learning (self-learning, informal peer-learning, formal learning) and inclusion (development of e-skills and competences, linking up of learning communities, building up of new partnerships), consolidating thus an evidence base on the added-value and impact of social networking tools and platforms for rural learning, with a particular attention to institutional as well as pedagogical innovation and change. Several technological solutions are tried including weblogs, wikis, podcasts, e-portfolios, social software, virtual social sites, and various usage schemes in the various sectors of lifelong learning, both formal (school, higher education, VET, adult education) and informal. Options for citizens' access to the digital resources are examined, making use of good practice examples in areas of work such as the operation of "learning hubs" in disadvantaged areas, the use of satellite broadband in remote rural areas, as well as other open and distant access approaches. This paper describes the vision for the use of social networking tools and platforms for teachers' professional development in rural schools, which is proactively fed into policy making and education and training systems, aiming to achieve a multiplier effect across rural Europe. A clear lifelong learning stance is taken, addressing multiple sectors including school education, higher education, adult education and professional development. An indicative use case, currently implemented in the Rural Wings school network is presented in the last paragraph of the paper.

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<sup>1</sup> on behalf of the Rural Wings consortium

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## LEARNING COMMUNITIES AND NETWORKS: INNOVATION AND QUALITY FOR NEW LEARNINGSAPES

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Download a lecture off the seminar web page as a pod cast in the morning, take part in an online session of an international studying group for the purpose of preparing for an exam in the afternoon and log into the virtual world of *Second Life* to take part in a tutorial relating to the morning's lecture – the daily routine of studying looks like this or similar more and more often. In companies, online trainings are no longer visions of a distant future, but reality for more and more employees. Teaching and learning is changing as well. The term “e-learning” comprises the use of online tools such as blogs, wikis or pod casts for learning and teaching. Learners can create their own contents and exchange information in networks like the video platform YouTube (<http://www.youtube.com>).

In many cases, reality looks different still and e-learning means merely putting seminar texts online on a learning platform. E-learning platforms today are used as islands on the Internet, which could become gates through the use of e-learning 2.0. These gates could help the whole world use the *Internet* as a world of learning where content can be found, changed and shared with others. Viewed like this, the Internet itself would be the learning platform. Stephen Downes, who coined the term „e-learning 2.0“, describes it with words such as “learner centred” “immersive learning”, “connected learning”, “game-based learning”, “workflow (informal) learning”, “mobile learning”. Will this development have consequences for quality assurance, management and development in e-learning? And if so: do we need new methods and concepts to improve and assure the quality of e-learning 2.0. These questions are the beginning of many debates around the term e-learning 2.0. Even though the question of quality was already discussed controversially in the time of e-learning 1.0, there is even more insecurity in the area of e-learning 2.0. E-learning 2.0 is not a scientific term. It is not about further development, a new paradigm or a replacement in the sense of a *new release*. E-learning 2.0 rather describes a number of developments, trends and points of view, which require change from teaching to learning.

E-Learning 2.0 is about learners learning in a self-directed way in social networks and learning communities. Although being used often in a synonymous way, there is a difference between communities and networks – especially with a view to learning. Building on Granovetter (1983) the difference between communities (as closer relationships) and networks (as more loose relationships) becomes apparent. Granovetter's (ibid.) explores in his influential social network theory the strength of weak ties. Accordingly, interpersonal relationships in networks have two basic forms: strong ties, which are based on the immediate work and life contexts and build the core of *communities*, and weak ties, which stretch beyond our direct and close contexts into other domains and are rather peripheral to the communities we are participating in – they in turn constitute networks.

What, however, happens in learning scenarios in which e-learning 2.0 is involved to the every important quality question? In cases in which learning material is not fixed beforehand, learning processes are highly diverse and not unified and learners find their own way of learning? And what about those education processes which happen outside of the programs and formal educational institutions? Who determines the quality of such learning scenarios, what can then be assessed at all and which methods can be used to improve quality?

In a presentation at the Innovations in Learning Conference by Brandon Hall, Stephen Downes (2007) used the metaphor of “walled gardens”, as “e-learning 1.0”. E-learning 2.0 cuts holes into these garden walls, which leads to a new culture of learning. This new culture of learning is characterized by more autonomy for learners, leading away from a *model of knowledge transfer*, which is predominant in many educational contexts, to a model of mutual construction of knowledge and development of competences. The emphasis lies on making learners *fit* for an uncertain future, to support them in their development to becoming “reflected practitioners” (Schön, 1983) and to supply them with a portfolio of acting competences with the help of which they can create their respective working and living contexts and innovatively develop them.

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## WIKI FUTURE GAZING

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Higher education institutions operate in a “borderless” and complex environment, abundant in potentially useful information. The Creating Academic Learning Futures (CALF) research project, carried out in partnership by the University of Leicester and University College Falmouth in the UK, involves the development of research approaches and tools to inform strategic thinking within the institution about the future of higher education. One of the aims of the CALF project is to design and test means of structuring and filtering information, in order to facilitate institutional strategic decision-making in participative and creative ways. This work has led to the creation of a web-based tool – the CALF project wiki – which provides a means for eliciting and structuring ideas and information from students about possible futures in higher education in innovative and creative ways.

The use of wikis for developing future scenarios with students for the enhancement of their learning is an innovation and its merits and shortcomings are still in need of careful assessment by academics, practitioners and learners. Insufficient availability of data and lack of a substantive theoretical framework regarding both future studies and the pedagogical use of Web 2.0 tools are major constraints for the wider application of these interesting approaches in educational research and practice. The case study reported in this paper demonstrates some of the strengths and limitations of using wikis for involving students in creative activities for generating future scenarios for higher education. New ideas emerge in a way that would not have been possible if conventional scenario planning methods were used. The use of the wiki enables collaborative creative thinking across a broader spectrum of possibilities about the relationship between the present and the future of higher education.

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## BACHELOR AND MASTER ONLINE – COMMUNITY-BUILDING IN NETWORKS OF INTERNATIONAL UNIVERSITIES

*Rolf Granow, Lübeck University of Applied Sciences / oncampus, Germany*

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### E-learning Solutions and Experiences at Lübeck University of Applied Sciences

The Internet is a major technology for innovation in learning and teaching. It enables new solutions and mechanisms for delivery, processing and exchange of information. At the same time it also facilitates innovative methods of online-cooperation and online-collaboration. The integration of both dimensions (information-processing and collaboration) empowers the web-technologies to improve the structures of learning and teaching. But technological progress is not a value of itself, it has to create value to users to become an innovation. The potential of learning on the web anywhere and anytime has to be incorporated into the systems and infrastructure of education to realise its benefits and avoid drawbacks.

The case of e-learning at the Lübeck University of Applied Sciences (Germany) shall demonstrate how web-technology has been used in higher education to generate a quantum leap in competitiveness and reputation of the university and how it has empowered its national and international relations. The case study may encourage institutions to share these experiences and assist in building their own e-learning-strategies, but also to share these competences and solutions and to join these networks. Institutional advantages will not be created by inventing the wheel again and again. It is more effective and efficient to build on existing solutions and proved strategies to join forces and to become a member of strong partnerships on an equal footing. Thus existing results and solutions will not only be consumed but expanded by active collaboration.

### The *oncampus* Concept

The Lübeck University of Applied Sciences founded the spin-off *oncampus* in 2003. It cares for professional operation and marketing of online distance study programmes and continuing education. The *oncampus*-methodology generally provides a blended learning scenario, consisting of 80% online teaching and 20% face-to-face classes. Every online course is coached by specially trained mentors. Recently also successful courses have been driven without face-to-face learning for global groups of students.

One lifeline of activities is the cooperation in university networks, exploiting economies of scale and scope. Close and continuous collaboration with university leaderships, authors and mentors is substantial part of the system. In this context, win-win situations for all partners ensure the achievement of objectives, based on sophisticated business models. As a matter of principle, the networks are open to new partners.

### Learning Communities in the Baltic Sea Region: The Baltic Sea Virtual Campus (BSVC)

The Lübeck e-learning projects were internationalised towards networks of universities in the whole Baltic Sea Region by initiating the Baltic Sea Virtual Campus together with Lund University (Sweden). This network today has partner in all parts of the Baltic Sea Region. Its objective is to contribute to the cohesion of the whole region by collaborative learning beyond national barriers and by cooperation across universities of the old and new EU member states. Outcome of this network are online Master courses such as *Transregional Management, Industrial Engineering and Information Science and -Services*. The principals of adequate partnership follow the structure of the German co-operations.

Beside its other benefits online learning enables new challenges of international and intercultural collaboration among teachers and students. Objective of the first pilot-implementations was to discuss and define viable ways for exchange of know-how and content for e-learning and fostering students to build their skills in cross-cultural virtual groups. The results from international online Master courses during the last four years and their evaluation are highly encouraging. Following this track e-learning has the realistic potential of overcoming barriers and changing structures across continents – more effective and efficient than in any other way of learning.

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## LEADING INNOVATION IN NEW AND EMERGING TECHNOLOGIES IN PUBLIC SCHOOLS

*Jean Brown, Bruce Sheppard, David Dibbon, Memorial University, Canada*

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The global technology revolution has had – and will continue to have – unquestionable impact on how students learn, and people work, and live. As for the application of emerging technologies for school/district administration and governance, there appears to be increasing use of new and emerging technologies; however, other than for basic word processing, record keeping, financial management, and the provision of basic information through a webpage, widespread sustained use of emerging technologies are only beginning to emerge. A shift away from traditional administrative strategies toward the use of new technologies is complex and challenging. It requires a high level of technological fluency and a willingness to change traditional norms and practices. This is not a single change, but a complex, disruptive bundle of changes. It should not be surprising, therefore, that direct engagement in such complex change process is somewhat challenging for even the most confident administrator.

The focus of our paper is on three primary research questions: (1) What are the sources of leadership for the adoption of emerging technologies in the school system? (2) What is the nature of the leadership evident in the implementation and sustained use of the technology? (3) To what extent is the adoption and implementation of new and emerging technologies an organizational priority? In order to develop answers to these questions, we have drawn upon data of two separate studies that we have conducted recently in our efforts to better understand leadership for the implementation of emerging technologies.

While leadership can come from many sources, in both of our studies reported in this paper, we found that external sources of leadership – the federal and provincial governments, the teachers' association, specific school district leaders, and the federation of school councils – had a major impact on the adoption of emerging technologies. For us, it was somewhat unsettling that, other than for individual district leaders, the identified sources of leadership for technology were external groups. While it may be that the nature of the leadership is of more importance than the source in adopting new and emerging technology in schools, the following questions beg to be answered: Do these external groups understand the needs of schools and school districts? Are the new and emerging technologies that are being imposed upon the school system the most appropriate? Do we have a lack of expertise in new and emerging technologies in the school system? What is the likelihood that these new technologies will be implemented to their fullest potential?

As for the nature of leadership, our findings are consistent with the growing evidence base in support of the view that the leadership needed for successful implementation of innovations is collaborative and distributed, and focused on the facilitation of organizational and individual learning. As well, our findings contribute to the emerging evidence that without systems alignment among key partners that include schools, school districts, and governments, there is little possibility of maintaining a sustained focus on any change efforts, and therefore, worthwhile innovations are likely to stall. While national or central governments are well positioned to provide funding and support for the adoption of innovation, our findings suggest that implementation and sustained use of innovation in education is dependent upon leadership within the schools and school districts.

In respect to our third question, we were disappointed and somewhat surprised that the adoption and implementation of technology in public schools for either administrative use or teaching and learning was not the priority we thought it would be. Few leaders identified technology as a priority. A somewhat disturbing insight was that several senior administrators perceived that the new technology was an important priority because it enabled bureaucrats in the centralized office to analyze data in their offices and to feel confident in making decisions from afar that had immense impact on local education. This, we believe, is cause for concern as it tends to overlook local contexts that need to be considered, but cannot be easily measured.

While technology will continue to accelerate and have profound effects on our society, its potential to positively impact public schooling may be mitigated in environments such as the one that we have studied where government maintains tight control over funding, is viewed as being the primary leader of technology adoption and implementation, and neither government nor other sources place priority on it. Further, given the level of government control over education in much of the western world, and the growing evidence that distributed leadership has the most promise for sustained innovation in schools, the magnitude of impact of new and emerging technologies on schools and school systems likely will continue to lag behind other sectors of society.

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## EMBEDDING INSTITUTIONAL INNOVATION

*Niall Sclater, The Open University, United Kingdom*

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There are numerous and well-documented examples of educational innovations at universities across Europe which appear to enrich the learning experience and increase administrative efficiency. The vast majority of these developments however are never transformed into mainstream institutional practice; most are dependent on short term funding and the enthusiasm of committed individuals. Despite numerous attempts by the EU, national and regional funding bodies and by the institutions themselves to stimulate the development of e-learning, universities continue operating to a large extent as they have always done.

This paper examines the reasons for the slow uptake of e-learning in higher education, and details the activities underway at the Open University UK (OU) to increase adoption. Reasons why planned usage of the OU virtual learning environment (VLE) has not been as pervasive as it might be by this stage include:

- **Lack of awareness:** Many staff are not aware of how to move from a primarily print-based educational paradigm to one which also effectively exploits the dynamic, interactive and communicative aspects of the Internet.
- **Lack of incentives:** Despite the encouragement at senior levels of the University for faculties to develop more e-learning activities, some course teams still have limited incentive to produce courses which involve online learning.
- **Concern to avoid alienating students:** Concern exists that some learners will be put off by courses which require Internet access and broadband connections.
- **Risk aversion:** There is a perceived risk and understandable caution in planning core course activities using a medium which has been under development.
- **Lack of skills:** Media staff are being trained to advise faculties better in aspects of e-learning and how to utilise the VLE effectively but are often too busy with existing work to have the time necessary to engage fully with the new technologies and their potential for enhancing learning.
- **Lack of VLE functionality:** Among some staff there has been a perception that Moodle (the open source learning management system at the heart of the OU VLE) tools are inferior to those found in some other systems.

The above barriers and the actions being undertaken to address them at the OU are discussed in the paper in the context of Kotter's eight-stage change management process, in particular:

- **Communicating the vision:** While the benefits of e-learning for distance students and for the institution are well-established, there is a continual need to remind staff in the University faced with having to change working practices of the positive impact e-learning can have on the student experience.
- **Intelligence gathering and data collection:** Linked to the communication strategy is an evidence-gathering activity involving the gathering and dissemination of case studies of e-learning practice at the university and elsewhere.
- **Staff development:** a roadmap has been developed for all staff development activity across the University, both online and face-to-face.
- **Building an e-learning community:** An eLearning Community was formed in an attempt to act as a catalyst for advancing e-learning activity within the University by creating a platform for the sharing of ideas and experience with other e-learning practitioners within the OU.
- **Funding:** The allocation of funding is another key mechanism to drive the implementation of e-learning in courses.
- **Adapting procedures and policies:** the existing processes and policies which militate against adoption of the VLE are being addressed systematically.

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# **“FIVE F”, A FLEXIBLE FORM FOR PROFESSIONAL LIFE LONG LEARNING: HOW ICT CAN MAKE DISTANCE EDUCATION BECOME A DISRUPTIVE TECHNOLOGY**

*Eva Carling, University of Gävle, Sweden*

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## **Introduction**

The background is how a university in a sparsely populated area has gained from its early adoption of ICT for education and communication while developing new methods for professional life long learning. Infrastructure of a distance portal, promotion and support for students while working together, interacting with other over distances; all methods that can be used whether on physical distance or in the same study course or same company.

A R&D project is described, where methods are developed for substantially raising the flexibility and cost efficiency of in service training (or other competence development). It will be using the university's facilities for validating competence using new digital media, support for flexible studies and contact points at the university and in the surrounding region. A software company partner delivers an advanced planning tool for competence development.

The low rate of success in 'on demand' flexible studies at workplaces originates from too little promoting of in-service training from the employer, and too little flexibility from the course organiser. Universities are starting to develop methods for meeting new societal needs, like changing curricula, rate and pacing of studies as well as distribution channels, tailored for companies and their staff, and for modern families and today's private life.

The Five F concept will analyse the intellectual structural capital in companies, assessing both the current competence and the new, needed and offering tailored education, based on ICT to get innovation and competence development in companies.

## **Theoretical influences and trends**

Theoretical underpinning and inspiration has been found in Clayton Christiansen's ideas of disrupting innovations; cheap enough for ordinary people and resulting in substantial change – the personal computer being the prime example. Other trends reviewed Terry Andersson's online learning or e-learning and social software communities, promoting sharewares and also using commercial freeware like VISA Enterprise.

Forms, tools and processes in the model are described and it is shown how competence development benefits from learning networks and ICT, things that can trigger innovation and economic growth.

## **Conclusion**

In conclusion, the model Five F – a flexible form for professional life long learning – aims at developing the existing facilities for e-learning. This is accomplished with tools and methods for developing competence and innovation power in companies, all aiming at tailoring education and designing new ways of R&D collaboration. The focus is on creating learning processes and networks, by means of ICT, processes that shall be vital input to innovation processes in companies and organisations.

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# E-CREATION – AN ORIGINAL WAY OF INTEGRATING DISTANT LEARNING ORIENTATION IN PRESENTIAL COURSES

*Anne-Dominique Salamin, HES-SO Valais, Cyberlearn, Switzerland*

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## Context

To sustain the expansion of e-learning in UASW-CH, the e-learning Centre Cyberlearn was created in 2004 with an annual budget of about 250,000 Euros. This Centre offers various services, ranging from LMS administration to specific resource development or on line course certification.

One of the most innovative service aims at backing-up didactical creativity: the e-creation call. Such an internal call is launched yearly, to globally address professors wishing to develop their own multimedia course, for distance teaching, thus helping students to understand theoretical concepts through illustrations and interactions.

2009 will be the fourth launch of the call. Every selected project will be granted 12,000 Euros (real money), but to be selected and receive funds, it must first fulfil some important criteria:

- The project should address a specific didactical issue, such as helping students understand a highly intangible notion, should offer an innovative way of learning or understanding this notion, or propose a tool to help students be more efficient in a professional environment.
- As UASW-CH lecturing is proposed in 31 different geographical locations, collaboration between professors, teaching the same course, may not be so easy to build-up. Therefore, the e-creation call requires that two professors, teaching at two different sites, lead the project.
- To ensure that site management gets involved, or at least informed of the project's existence, it must allocate an equivalent amount of money as offered by Cyberlearn. Real money is not compulsory, the use of a specific technology, machine or virtual money (assistant hours etc.) are gladly accepted.

Until now 28 projects have been funded, covering various fields: algorithmic computing, architecture, health, statistics, programming or business and are designed and implemented in flash, videos or specific softwares.

The e-creation call is not only interesting because it increases the number of multimedia resources developed in the UASW-CH during a year time, but also because the professor has the complete control on the project, from the idea to its final implementation. Cyberlearn is ready to help teams on pedagogical and technical issues, but the real "directors" are the professors involved in the projects. The heavy involvement, the collaboration as a multidisciplinary team, lead professors to reconsider what they teach from two different angles: how can technology, particularly multimedia technology, help illustrate a specific notion, and how will didactical notions be challenged by the use of multimedia technology. The crossing between didacticism and technology proved to be productive especially in a distant learning context. Professors are progressively aware of the fact that this absence impacts strongly on resource design: resources should embed at least three roles: illustrating, guiding and evaluating.

Largely due to popularization and simplification of multimedia technologies, increasingly more e-creation resources are being created with a rising creativity level, even when projects focus on highly technical issues. We consider that this creativity level is a direct consequence of awareness of the tool potentialities and of the two-way view on a single learning object by two different professors, each offering his own personal understanding and didactical praxis, fertilizing debate, design and final realization.

# KNOWLEDGE TRANSFER IN THE FIELD OF NEW TEACHING AND STUDYING FORMS UNDER REFERENCE OF RESEARCH ACTIVITIES AT ZWICKAU UNIVERSITY

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Rolf Granow, University of Applied Sciences Lübeck / Oncampus GmbH, Germany*

The medium of studying electronically can be defined in the multilayered application area of the academic education as a very complex field of duty. For this reason it requires a support of the users to remove entry barriers and to reduce deficits in the application of e-learning.

In the context of the project “Last Mile Solution by e-Education competence clusters for the Saxon knowledge transfer and education export (KOWIB)” a modular, layered training concept was made for a special e-learning/Learning Management System (LMS) – platform so called OPAL, which is aimed at mentioning as many facets as possible. For this the contents were divided into the two main aspects: methodology/ didactics and technologies. The realization of the aspect technology proceeded over workshops built up modularly which are offered at the university. Main emphases as regards content are topics like media design, handling OPAL as well as authoring systems. Furthermore the contents of the modules are accessible in the LMS OPAL freely. About expert lectures to the topics methodology/ didactics as well as media law which also are offered as a web conference, the possibility is given covering the second aspect. To this, different experts who reported of their experiences could be won, so for example in the field of the arrangement of network-based, dual courses of studies. The lectures in addition are recorded as a video and offered for the download.

By the internal cooperation of different institutions competences were transferred, experiences exchanged and knowledge could be enriched. The base for knowledge transfers is created with that also to the outside.

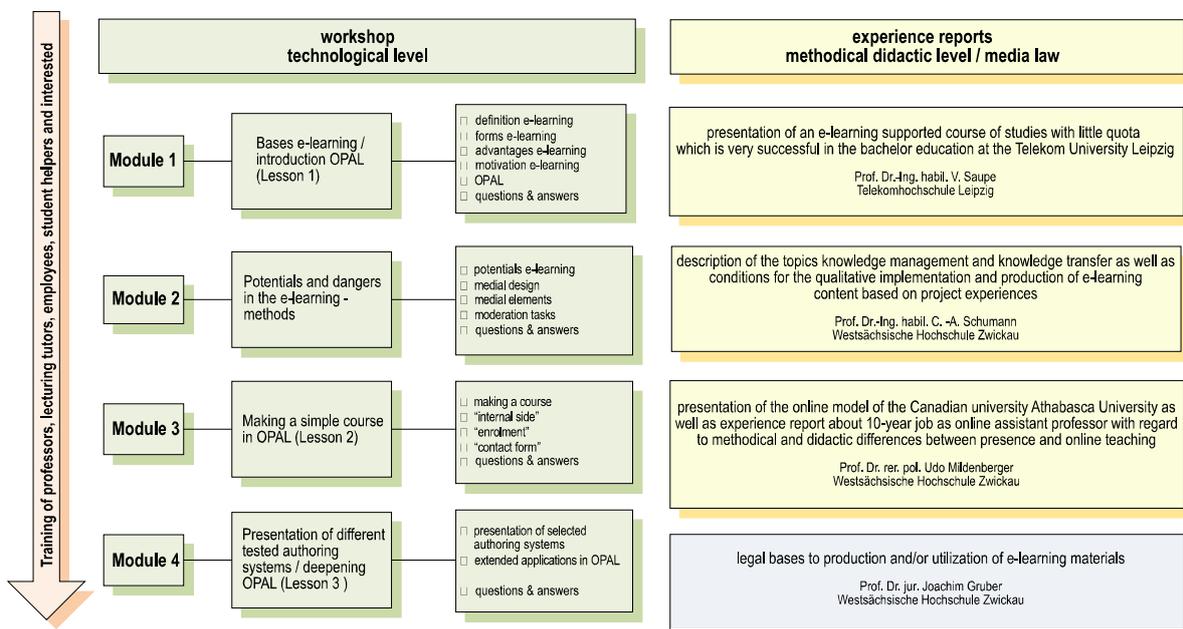


Figure: Modular, layered training concept and operation levels

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# THE CHANGING LEARNING EXPERIENCE: HIGHER EDUCATION IN A WEB 2.0 WORLD

*John C. Fothergill, University of Leicester, United Kingdom*

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## Investigating the Impact on Higher Education of the Use of Web 2.0 Technologies

Increasingly schoolchildren employ Web 2.0 technologies both socially and within the school curriculum. These technologies are normally on-line and facilitate communication, collaboration, participation, and sharing. Facebook is a good example. It had been noticed that this was not only changing behaviour (e.g. the use of computers in favour of watching television) but also attitudes and expectations. There were indications that new university students would presume the use of Web 2.0 technologies to be natural in a higher education environment. An independent committee was therefore established in the UK under the leadership of Prof. Sir David Melville to conduct an independent inquiry into the strategic and policy implications for higher education of the experience and expectations of learners in the light of their increasing use of the newest technologies. The committee was supported by the principal bodies and agencies in UK post-compulsory education. This paper summarises the conclusions and recommendations of the committee's report published in May 2009<sup>1</sup>.

The committee reviewed the findings of cognate studies, took oral evidence from a range of practising academics and researchers; and commissioned briefings and studies, including one substantial piece of work on current and developing international practice in the use of Web 2.0 in higher education<sup>2</sup>.

## Conclusions of the Committee

Young people, especially those who will become higher education students in the next few years, inhabit the Web 2.0 world with ease. They willingly create, share and participate in web spaces, and have a strong and natural sense of being part of an on-line community. They expect to find information quickly and easily, but they generally lack criticality in evaluating their findings and they are casual in attributing authorship or recognising issues of copyright or intellectual property. The attributes of higher education tend to run counter to Web 2.0. The environment of academics tends to be individual or at best hierarchical, their work guarded, constructed slowly after careful consideration of the provenance of evidence, and published with extensive citations following a process of peer review. Meanwhile, the commercial market place is demanding more nimbleness and flexibility, expecting its employees to be adept at 'soft skills' such as networking, teamwork, collaboration, and self-direction, which are among those fostered by students' engagement with social web technologies.

Currently students adapt to the exigencies of higher education without necessarily changing their attitudes. However, the attitudes and expectations of the new generation of incoming students, coupled with the pressures for including aspects of vocational training in the curriculum, may necessitate some rapprochement in higher education if it is to continue to provide a learning experience that is recognised as stimulating, challenging, and relevant. The impetus for change will be reinforced by the positive experience of new cohorts of students, often with the support of schools, through engaging with Web 2.0 technology.

Higher education is respected for its academic rigour. The skills in interpreting information and data, leading to new understanding and knowledge, are essential to the development of society. Higher education must therefore fulfil the new role of helping students refine, extend, and articulate the diverse range of skills they have developed through their experience of Web 2.0 technologies whether or not *e-learning* methodologies are incorporated into the curriculum. Higher education needs to build on and perhaps champion, the behavioural traits associated with Web 2.0 technologies such as experimentation, collaboration and teamwork whilst addressing the negatives such as the casual and insufficiently critical attitude to information. In accepting responsibility to change in this way, higher education institutions must consider the choice and deployment of appropriate tools to achieve these ends. Considerations will be required for improving learner skills, staff skills, IT infrastructure, and relationships between the higher education, FE, and schools' sectors. In the UK, bodies such as the HEA, JISC, and BECTA will be vital in supporting this work.

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<sup>1</sup> The final report will appear at: <http://www.clex.org.uk/ourfindings.php>

<sup>2</sup> Report of the review of current and developing international practice in the use of social networking (Web 2.0) in higher education, available from <http://www.clex.org.uk/latestnews.php> (accessed 30 April 2009)

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# HOW GREEN IS YOUR LEARNING?

## PEDAGOGICAL OPTIONS FOR ENVIRONMENTALLY SUSTAINABLE EDUCATION

*Samuel Nikoi, Matthew Wheeler, Beyond Distance Research Alliance, University of Leicester, United Kingdom*

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### Introduction

In 2002 the UN launched the Decade of Education for Sustainable Development to integrate sustainable development into all aspects of education. In the UK, and within the education sector, the Higher Education Funding Council for England and the Learning and Skills Council have published strategies aimed at environmentally sustainable education. The Times Higher Education published in 2008 a Green league table ranking universities by their environmental performance. The University of Leicester was ranked 96<sup>th</sup>, the lowest of all HEIs in the East Midlands.

### Greening of E-learning Check Out (GECKO)

GECKO, funded internally by the University of Leicester, was a pilot study to address environmental challenges faced by the University. It compared the total carbon emission of students during a blended learning course, i-Science, with those emitted during a face-to-face Physics course on four key parameters (ICT, paper, energy and travel) with an aim to start to inform the University's policy on environmentally sustainable learning and teaching.

### Study Aims and Objectives

- To compare CO<sub>2</sub> emissions of blended and face-to-face modes of delivery.
- To test the hypothesis that blended learning is more environmentally sustainable than face-to-face.
- To develop the Learning Carbon Footprint for various modes of delivery.

### Research Methods

GECKO surveyed online 10 student volunteers from each of the two courses: BSc i-Science and BSc Physics over a three week period in November-December, 2008. Students were given booklets to keep a log of how long they spent on their PCs or laptops, photocopiers and scanners, how much paper they used for printing and photocopying, how much energy they consumed in the form of electricity and gas for heating and lighting, and how far they travelled by public or private transport to or from the University.

### Findings

- CO<sub>2</sub> emission associated with ICT use is higher for face-to-face than for the blended learning. Students on the latter use laptops which may be more environmentally friendly than PCs despite their longer use.
- Paper use is higher for face-to-face learning than for blended learning. Face-to-face students, more than blended learning students, are likely to have access to printing and photocopy facilities on campus.
- More energy is used for heating rooms for individual blended learners' accommodation than for lecture halls for face-to-face students, although the difference depends on the class size and capacity in the face-to-face mode.
- CO<sub>2</sub> associated with travel are higher for blended learning than for face-to-face students because these students are mostly mature students who do not live locally and tend to use their own transport to travel to campus.

### Recommendations

- Provide support for environmentally sustainable learning design.
- Encourage green "travel" through synchronous interaction, using web-conferencing tools.
- Make students aware of the environmental implications of their learning-related behaviour.

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## INNOVATION THROUGH CONVENTION? BUILDING CONSENSUS FOR RPL PRACTICE IN CANADIAN UNIVERSITIES

*Dianne Conrad, Athabasca University, Canada*

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This paper builds on the proposition that the process of recognizing prior and/or informal learning (RPL) contains within it innovative and creative ways to enable and promote sustainable learning cultures. In many university environments, however, including Canada's, recognizing prior and informal learning remains contentious and marginalized. From its initial proposition, this paper presents one Canadian university's attempts to innovate by drawing on fairly conventional means where quality and transparency might open the door to new thinking.

### **Responding to the need for creativity**

Western societies' new notions of "worker" have become multi-dimensional, its new dimensions including engagement, knowledge creation and transfer, and sustainable learning. Not only must we change the ways in which we educate our youth and citizenry but also the ways in which we think, define, and create. A new generation of Web 2.0 learners are global and digital citizens who are more comfortable using communication and social networking tools than previous generations of users. These learners seek not only to integrate their sense of self into their learning but also to demonstrate themselves to their co-learners. They thrive on levels of self-created energy. Attempting to meet society's new demands, educational institutions have implemented some degree of responsive and responsible innovative strategies that often manifest as open and distance delivery models. This paper posits that RPL processes can provide the vehicle for this type of expression by offering not only a platform for expression but a vehicle for encouraging and facilitating both critical and innovative thinking.

### **RPL: A quality process of thought and discovery made transparent**

Learning portfolios of the type that Athabasca University uses in its RPL process are efficient, structured documents that purposefully centre on learners' demonstration of prior informal and experiential knowledge. In order to identify, determine, organize, and present this knowledge appropriately, learners must engage in sustained, thoughtful, and "puzzling" reflection to make sense out of past learning experiences. From this exercise comes the expression of documented and assessable learning and the development of meta-cognitive abilities and degrees of confidence, self-esteem and self-awareness.

By Canadian university standards, AU's system of RPL is boldly innovative but contentious even within the institution. In order to relieve academic nervousness, AU has turned to the conventional devices of transparency and quality assurance, highlighting in particular these foundational aspects of its process: mandate, policy and procedures, governance, assessment rigor, transparency and accessibility, student support, communication and feedback, and its appeals process.

With these measures, and clear access to them, in place, it is hoped that the innovative and useful RPL process will be recognized by more Canadian post secondary institutions for its economic and educational potential.

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# A PROPOSAL TO HARMONIZE VIRTUAL MOBILITY AND THE EUROPEAN QUALIFICATION FRAMEWORK

*Alfredo Soeiro, Rita Falcão, University of Porto, Portugal*

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## Introduction

Europe has been investing in developing and implementing policies and tools to promote trans-European cooperation and mobility in many fields, including in Education. The Bologna Process is creating a European Higher Education Area where mobility, transparency and competitiveness are key concepts. The recent formal adoption of the European Qualifications Framework (EQF) was an additional and important step to achieve mobility in higher and continuing education.

The project of this network proposes to help educational and training institutions to achieve Virtual Mobility and to guarantee EQF implementation through e-learning, aiming at finding specific obstacles in institutions and proposing concrete and innovative solutions. It will promote cooperation and joint work among partner organizations and will link with related initiatives. It will address other educational networks to help the dissemination of the results.

## General Information and Objectives of VIRQUAL

The network is entitled VIRQUAL: Network for integrating Virtual Mobility and European Qualification Framework in HE and CE Institutions. Started the 1st January 2009 with the duration of three years and is being financed by the LLL programme, Key Activity 3 (143748-PT-KA3NW). The current site is <http://virqual.up.pt>. The list of partners are Universidade do Porto, Portugal, Universidad Politécnica de Valencia, Spain, Technische Universität Wien, Austria, Eesti Infotehnoloogia Sihtasutus, Estonia, Gábor Dénes Főiskola, Hungary, Orta Doğu Teknik Üniversitesi – Sürekli Eğitim Merkezi, Turkey, Universidade Aberta, Portugal, TecMinho – Associação Universidade-Empresa para o Desenvolvimento, Portugal and Verein zur Förderung des Einsatzes Medien in der Aus- u. Weiterbildung, Austria. The specific objectives are:

- To define, exemplify and promote discussion in using e-learning as a scenario to foster national and international collaboration of Higher and Continuing Education to achieve virtual mobility.
- To critically assess and exchange results, ideas and innovation about European, national and local policies and initiatives in the area of Virtual Mobility, to identify obstacles and facilitators.
- To cooperate in the elaboration and implementation of concrete Virtual Mobility scenarios, by establishing partnerships among the network institutions, and providing solutions and specific tools for different processes and stakeholders involved in the process.
- To elaborate, implement and disseminate tools to analyse, support, manage at Institutional level, contributing to improve the Virtual Mobility in Europe while trying to implement EQF requirements.

## Call for Participation

VIRQUAL intends to encourage other institutions to participate in the activities, joining the SIGs and contributing to the development of the European common knowledge in this area. This participation may be done as passive members willing to receive information or as active contributors in the research, in the debate and in the definition of the framework of the integration of virtual mobility and EQF. Possible participants of this network are invited to join one of the four discussion groups that will address research questions. In fact the definition of the terms of how this linkage, between virtual mobility and the system of the EQF, will be established, will be tested and will be accepted is the main advancement expected from this project. Therefore the contribution of a large group of interested partners and of other institutions may lead to an easier acceptance of any proposal by the learning community of e-learning. Another possible benefit of being involved as non formal partners can be the access to the information created in this project with an eventual creation of a network to progress in this theme.

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## INNOVATIVE IN-COMPANY LEARNING INITIATIVES IN IRELAND: LEARNING TO LEARN THROUGH COLLABORATIVE PARTNERSHIPS

*Alan Bruce, Universal Learning Systems, Joe Kelly, Waterford Crystal plc, Ireland*

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The recent transformation of the workplace in Ireland has been driven by a number of factors. These include:

- The ability to cope with increased and sustained levels of competition
- Advanced and improved information and engineering technologies
- Legislative and standards based requirements
- Stronger emphasis on quality
- Social partnership and dialogue
- A stronger focus on customer needs.

This process requires flexibility, adaptability and customer responsiveness on a continuous basis. The development of an interdependent and interactive workplace places new demands on every employee (including general operatives) to participate more effectively in overall organizational performance. The future success of work organizations will depend increasingly on the extent to which every worker's potential is realized in meeting strategic interests of the enterprise. In a knowledge-driven and technologically sophisticated work environment, the contribution and motivation of each employee becomes a crucial differentiating factor in competitiveness. This places both an opportunity and challenge for contemporary innovative and e-learning applications. This paper looks at a set of innovative learning strategies and projects developed in one of Ireland's largest private employers – Waterford Crystal – over an eight-year period to achieve these applied developmental objectives.

Waterford Crystal is one of the most recognizable Irish brands in the world. Its significant changes in work practices and capacity building have produced many challenges for learning perspectives under the full impact of globalization. In 2009 the company has reached financial insolvency but continues to hold significant lessons for the design and application of work based learning for Irish industry. Priority was given to experimental projects falling under one or more of the following headings:

- Developing new systems of training, counselling and employment including adapting the work place to new technologies
- Training with appropriate guidance, work placement and support programmes
- Supporting job creation and innovative measures to secure employment, including new public and private partnerships.

The range of Waterford Crystal employment in-company learning projects was conceived and developed in the context of adaptability and life-long learning. The learning from this goes a considerable distance to informing national and European policy on work-based learning. These projects have made a significant contribution to the experiences of its pupils and participants. The courses produced strong and positive outcomes in terms of learning, growth in personal confidence, introduction to study methods and applied learning in work-related contexts. The subsequent unravelling of much of the economic progress of the Celtic Tiger years with the advent of the economic crisis and recession in September 2008 should not obscure the valuable lessons learned. In a time of severe financial restriction the imperative to invest in training, education and learning must be re-affirmed. In the times ahead accessible and empowering work-based learning will be a key element in advancing European competitiveness in real terms in a globalized world. The lessons of the innovative learning projects of Waterford Crystal and its consortium partners are an important element of this legacy.

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## NON-CONVENTIONAL DEVICES IN TRAINING: USING A PSP IN A BANK SETTING

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The paper presents a pioneering project about the introduction of ICTs in the internal training offer of a Swiss bank. The learning innovation is represented, besides the bank context which is usually refractory to changes, by the use of a mobile device – Sony™ Playstation Portable (PSP). In fact, there are only few studies in the literature reporting the use of PSP in education. This is not the case for Great Britain, where they count nearly 100 projects in educational and training institutions, most of them promoted directly by Sony™. As other mobile devices, the core value of PSP is its versatility, since, thanks to its handiness and its multimedia and interactive functions, it allows anywhere and anytime experience.

Mobile devices in education constitute a specific field of research called “mobile-learning” (M-Learning). It is commonly recognized as the intersection field between mobile computing and eLearning. As for eLearning, a paradigmatic change is necessary to let mobile devices serve educational purposes, more precisely: the focus should shift from the device to the learning process, a specific adaptation of eLearning materials is required and the distinctive features of any device have to be taken into account. The project presented here supports these paradigmatic changes, discussing the lesson learnt while introducing the PSP in a traditional training context.

The project is being carried out by the eLab – the eLearning service of the University of Lugano (USI) and of the University of Applied Sciences of Southern Switzerland (SUPSI) – and the NewMinE Lab – New Media in Education Laboratory (University of Lugano), on mandate of the Banca Popolare di Sondrio (BPS Suisse). The objective is to enhance the flexibility and the impact of learning activities, in order to spare time and logistic costs, and to provide the Human Resources office with a more reliable instrument to monitor trainees’ outcomes. The addressees of the project are the new employees of the bank, who have different backgrounds and work in different offices. The new educational strategy had to: (a) be flexible in terms of time, space and duration of the learning activities, (b) allow the individualization of tasks, (c) support interaction between new employees and tutors, (d) gather valuable data for the assessment of the users.

The technological choice has been twofold: the main instructional materials were developed on a Moodle-based LMS and integrated with fast-consuming content materials loaded on the PSP. Interactions with the tutor and among employees were assured by the LMS communication tools (chats, forums, etc.). Feedback from the pilot phase of the project, carried out along four weeks, showed a general positive evaluation, letting emerge some points worthy of attention, in particular about the use of the PSP. The device caused a sort of “gadget effect”, in the sense that its immediate success was not due only to its technical functionalities, but also to features like innovative potential, creative style, friendliness, social acknowledgment; it was perceived as being a “cool” object, this way becoming an identification theme for the users. Nevertheless, the focus had to be re-set for what it concerns the contents. In fact, initially they were produced short summaries in the form of animated slideshows, but financial issues can be hardly exemplified and summarized, besides text-based materials are uncomfortable to be read on the little screen of the device. Therefore, on the base of users’ feedback, it has been decided to stress the multimedia nature of PSP, by developing three groups of learning materials constituted by video-clips, interviews with experts, self-assessment exercises in a quiz-style.

The experience with the PSP teaches that when designing learning activities with a mobile device some distinctive features have to be considered, in order to capitalize its potentials for the educative purposes.

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# HUMAN RESOURCE MANAGEMENT PRACTICES, ORGANISATIONAL COMMITMENT AND WORK BEHAVIOURS: THE IMPORTANCE OF TRAINING AND DEVELOPMENT PRACTICES

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## Framework and Purpose of Study

The issue of the relationship between human resource management practices and organisational results has interested the academic community for several decades. In recent years, the discussion has been based on considerable amounts of research conducted in a variety of regions using organisation samples from different business sectors. The studies conclude that there is a positive correlation between quality of human resource management and organisations' results.

The aim of this study was to analyse the role that high-performance human resource management practices (training and development opportunities, development-oriented performance appraisal, information sharing, participation opportunities and reward practices with performance-based incentives) play as predictors of organisational affective commitment and the mediating role performed by organisational commitment in the relationship between these HRM practices and spontaneous work behaviour favourable to organisations, more specifically (making suggestions and disseminating a positive image of the organisation, helping co-workers, showing a concern for quality of work and making a personal investment in their professional development).

Our goal was to contribute to an understanding of the role of HRM practices in the development of people's affective ties to the organisation they work for and demonstrate the importance of these ties in stimulating competitiveness and personal development.

## Method

The study was based on a questionnaire answered by employees (n=514) at six Portuguese banks. High-performance human resource management practices, affective organisational commitment and the behaviour favourable to the organisations were measured using items based on literature.

## Main Results

The results show that training and development practices, development-oriented performance appraisal, access to information and reward practices with performance based incentives are predictors of affective commitment. The results also reveal that affective commitment contributes to spontaneous work behaviour favourable to the organisation. They also suggest a virtuous relationship between affective commitment and training, as they show that training and development practices contribute positively to affective commitment and that affective commitment contributes to personal investment in professional development

## Contributions and Relevance

The study stresses the importance to the development of affective commitment of organisational practices that contribute to a perception of personal competence, especially training and development opportunities, development-oriented performance appraisal and access to information about the company. It also shows that, when training is assessed, consideration should be given to its impact on organisational commitment. In addition, it underscores the role of affective commitment and training and development practices in the emergence of spontaneous work behaviour favourable to the organisation, particularly suggestions and dissemination of a positive image, cooperation at work and people's willingness to invest time and money in their professional development.

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## CHANGE, CULTURAL DIFFERENCE AND COMPETITIVENESS: INNOVATIVE DIVERSITY E-LEARNING IN THE FINNISH CUSTOMER SERVICE SECTOR

*Alan Bruce, Universal Learning Systems, Ireland, Teemu Patala, Ari Ketola, Context Learning Finland, Finland*

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Modern European societies are experiencing unprecedented rates of change at all levels. These changes are seen in a number of ways and in a variety of contexts. The rate of immigration into the EU has strongly increased during the last 20 years. This builds on earlier population movements following the Second World War that saw the exponential growth of the 'guest worker' system and the creation of large ethnic minority communities in the centre of the major European economies. As a direct result of the development of a free labour market in the European Union, greater numbers of Europeans can move between different countries to find new jobs or better standards of living. All European countries have seen the impact of this change or are in the middle of addressing the policy, social and economic issues that arise from it. These changes produce many benefits but they also have created a number of challenges and difficulties.

The nature and scale of this has a direct impact on learning for those working in the commercial sector. The need to develop relevant and practical training materials and learning frameworks for staff at the interface of cultural, ethnic and religious difference is a key driver for innovative diversity competence development. This applies particularly to the customer service sector.

This has particular relevance for Finnish employment contexts. Finland has one of the most progressive, tolerant, innovative and ethical business environments in the world. It has extensive social security supports and well-developed research and technological capacity. It is also however an ethnically homogeneous country with almost no tradition of significant inward migration. In many aspects it has been geographically and culturally isolated from the outside world. Encountering difference and variation has the potential to create significant levels of stress, unfamiliarity, misunderstanding and even conflict. A critical task in Finland has been to develop technologically sophisticated learning and training packages that develop competence and understanding in this environment of diversity and change.

Meeting the needs of employers and organizations in a time of change has been a key strategic objective of two e-learning and training design companies **Universal Learning Systems (Dublin)** and **Context Learning Finland (Helsinki)**. The ULS/CLF partnership located the need for state-of-the-art training solutions for companies in Finland who are now experiencing significant change in customer and staff profiles. The topics identified by ULS (diversity, ergonomics, universal design, equality) were matched to the CLF expertise in creating high-quality interactive learning experiences on the web. These perspectives support each other strongly and are now being rolled out for a range of employers in Finland. They are supported by a common website where course categories and products can be accessed ([www.changelearning.eu](http://www.changelearning.eu)).

The collaboration developed between ULS and CLF is in itself innovative. It marries two different national traditions and perspectives within a common context of excellence in learning methodologies. It compares and contrasts differing national traditions around migration and policy and relates this to a common framework for mutually beneficial applied learning. It brings together academically cogent and validated learning together with practical and applied behavioural and attitudinal change perspectives. The training courses now developed can be:

- Run on a company server
- Delivered through networks (internet, company intranets, etc.)
- Stored on a DVD/CD medium for delivery.

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## A PASSPORT TO OPPORTUNITY: THE LEARNING MODEL OF THE CISCO NETWORKING ACADEMY

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The paper is aiming at sharing a good practice on how to use ICT to create new value for learning. The authors of this paper present the example of an innovative learning environment – the Cisco Networking Academy model, which over the past ten years proved to be successful worldwide and resulted in continuous growth of participating students and instructors, who are willing to follow and acquire the newest IT computer networking skills. Launched in 1997, Cisco Networking Academy is a well-functioning partnership between Cisco, educational institutions, government and community organizations around the world, aimed at nurturing IT professionals. The program employs an e-learning model, using a combination of Web-based and instructor-led training along with a hands-on lab environment to teach students how to design, build and maintain computer networks. By means of presenting the model of the Cisco Networking Academy the authors highlight the most critical elements of developing institutional structures for tomorrow and they also show what they consider the main success factors are of an educational ecosystem, which is built upon ICT, as key booster of change.

'Network' has different meanings (network infrastructure and social network). The Cisco Networking Academy provides a new approach on how to think about this phrase in an eLearning community so as to utilize the most from the networking phenomenon. Cisco Networking Academy partners with educational, nonprofit, business, and government organizations, through a powerful public-private partnership model that makes it possible to accomplish together what would not be possible alone. Networking Academy and its partners work together to help students succeed during and after their studies. Cisco supports its educational partners with the following services:

- Internet access, online curricula and materials at no cost to nonprofits
- Discounted networking equipment for hands-on labs
- Cost-recovery options for instructor training
- Innovative tools and resources to help students build professional ICT career pathways

The Cisco Networking Academy program has practically become the blended learning project of choice for delivering networking-oriented courses. It has a very loyal user base both among students and instructors. This is undoubtedly caused by the very convenient-to-use LMS, high quality materials, hand-on labs, competent instructors and the ongoing drive to maintain the quality and professionalism of the courses. Being one of a few ongoing and successful collaborations between a business company and educational sector at such a large scale and so tightly interconnected with industry environment, it also has the unique notion of being something that has a real impact and importance, and students feel that. The professional demands put on instructors require that they maintain and even improve continuously their proficiency and skills while making sure they are comparable or even better than specialists working in business having the same certification level. All in all, the Networking Academy program has managed to create an environment which naturally motivates both the students and instructors to continuously improve and get better and more knowledgeable whenever possible. Networking academy initiatives focus on support of professional standard of teachers of secondary schools and universities in the field of ICT based on implementation of recognized industry certificates in education. This objective is directly set in the National Lisbon Strategy as the priority field of "Education and Investments into the People".

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# USING WIRELESS TECHNOLOGIES FOR CONTEXT SENSITIVE EDUCATION AND TRAINING

*Ed O'Brien, LM Ericsson<sup>1</sup>, Ireland*

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## Introduction

The profile of the typical mobile device is changing rapidly. It is estimated by 2010 that the number of people using mobile broadband connections will have increased to over half a billion. Devices running Windows Mobile and Symbian have many of the features of laptops or desktop computers and are now being used to access the net at broadband speeds.

Using established technologies such as GPS and SCORM, and developing for newer technologies such as RFID (Radio Frequency Identification) and Mobile Positioning, training content can be developed for both context sensitive and location based delivery. Context sensitive education and training refers to training material which is directly relevant to the training situation that the learner finds themselves in. An example of a situated learning activity would be studying art in a gallery instead of from an online photograph or a text book. In this scenario, the learner would be pushed information about the specific artwork they are standing in front of which would be determined by the mobile network. Handheld devices can be used in public and social settings where larger devices would be intrusive and seem out of place.

## Case studies

Using J2METM and LWUIT technologies, Ericsson/Giunti Labs have created courseware for two different versions of the Radio Base Station (RBS) telecommunications node. The partners have developed eXact GEO, a customized solution not only able to locate the position of the user but also to provide on demand the list of contents related to the items located around the user. eXact Mobile also feeds tracking information back to the LMS allowing the learner or mobile worker to follow learning programmes using the most convenient device available. Once the GPS co-ordinates of the equipment (RBS) has been entered into the system, the student is alerted and the appropriate courseware (version specific) is pushed to his/her device of choice. As the material is SCORM compliant, the LMS (Learning Management System) can track usage.

London Metropolitan University used Mediascapes and QR codes for the delivery and manipulation of a series of mobile learning applications that are being used to support student teachers in exploring their knowledge and understanding of urban education in a meaningful context (Smith, Cook and Bradley, 2008). The learning content developed for the mobile devices is directly relevant to the context of the learning needs and the location of the learners. It provides evidence of how the organisation and (re)structuring of urban space worked alongside educational discourses and policies to support participation in civic urban life and educate generations of working class children. The learning experience involved a tour of a specific urban area.

The positive benefits of the use of the context aware and location based technologies for the mobile tour far outweigh any negative issues. The benefits include:

- the learning experienced has been enhanced
- the student's attention becomes more focused and they concentrate on the tour more, because they are looking at what is coming up on the device (and after a while waiting for it to appear), and working on the tasks given.

## What next?

The ultimate aim is to develop content and services that will be scalable to IP Multimedia Systems (IMS) networks and will take advantage of faster speeds and newer mobile services as they become widely available to learners.

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<sup>1</sup> Partners of LLP Contsens project

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## EMPOWERING INNOVATION IN TECHNOLOGY-ENHANCED INSTRUCTION: THE TEACHER TRAINING PROGRAM “INTEL® TEACH – ADVANCED ONLINE”

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Recent emphasis on developing the capacity of nations for innovation as a measure to increase their competitiveness in the knowledge economy has placed an urgent demand on education to prepare a skilled, creative and innovative workforce. Efforts to set educational standards for the changing landscape of the knowledge society have brought to the forefront of educational objectives the development of information and communication skills, thinking and problem-solving skills, including creativity and intellectual curiosity; as well as interpersonal and self-directional skills. Preparing teachers to target students' skills development in their teaching practice is currently dominated by actions for improving their competencies to utilize technology for this purpose. This requires not only developing teachers' technology skills, but also their knowledge of new pedagogical methods for productive technology inclusion.

A professional development program – *Intel® Teach – Advanced Online*, was designed and implemented, specifically aiming to equip teachers with the necessary technical and methodological knowledge and skills to integrate technology in their classroom practice and to provide them with a platform to share their knowledge, experiences and ideas. The program is part of a larger initiative of Intel Corp. – Intel® Education, which includes a portfolio of further teacher professional development courses, formal and informal technology-enhanced learning opportunities for students, science and technology competitions, and higher education projects. *Intel® Teach – Advanced Online* was developed and implemented in 2003/2004 in cooperation with the Academy for Teachers' Professional Development and School Management in Dillingen (ALP) – a state-owned Teacher Training Center in Bavaria, Germany, and offered to teachers since then. The program is designed as a blended-learning course with face-to-face and e-learning training phases and is theoretically grounded in proven effective professional development concepts: collaboration, self-direction, on-the-job training, mentorship. The professional development process is based on a pedagogical framework called 'Learning Path'. Within it teachers select a pedagogical approach or certain digital media tool to learn about and use. Collaboratively with other teachers they apply the chosen approach or tool to develop a unit plan, which they consequently implement in their classroom, evaluate and enhance for further use. The collaboration between teachers occurs in face-to-face meetings and through the online platform, which has several main areas: resources, work with the learning path, collaborative tools, additional information and online support.

The implementation of the *Intel® Teach – Advanced Online* program was evaluated externally by the Institute for Media and Educational Technology in the University of Augsburg. The collected data included an online, self-report end-of-training survey of teachers who complete the program ( $n=4633$ ); additional self-report surveys of mentors ( $n=152$ ); surveys of teachers ( $n=418$ ) and university students ( $n=67$ ) at the educational fair Didacta 2006; and online questionnaire with open questions of regional senior mentors of the program ( $n=14$ ). The findings of the evaluation show that *Intel® Teach – Advanced Online* has a positive impact on teacher attitudes, competencies and practices and contributed successfully to addressing the need for training on technology inclusion in classroom. More specifically, the participating teachers reported that as a result of the program they improved their technical and methodological competencies for using digital technology in instruction, had a lot of new ideas to use digital media in teaching, increased their confidence to use new media and to a lesser degree their competencies for evaluation and collaboration. Regarding the impact on their practice, teachers report slight improvement of the quality of their teaching and increased motivation of students in technology-enhanced classes, although the assessment of possible increase in students' skills is rather conservative. Key factors for successful participation in the program and competence gains were effective collaboration with other teachers, usability of the online platform, support by mentors, supportive school leadership, available time and good technical infrastructure.

The program has been implemented in different scale in all federal states of Germany and after a process of localization in further six countries. Its implementation, evaluation results, continuous improvement and migration across borders can be considered as proof for the potential of e-Learning in combination with face-to-face interaction to improve teachers' competencies for pedagogically sound integration of technology in the classroom. Further examination of the use of the online platform for informal learning, of the impact on student learning and skills, and of the long-term effects would contribute to the understanding of the value and impact of e-Learning in teacher professional development.

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## NAUCZYCIEL.PL – INTEGRATOR ON EDUCATION SERVICES MARKET

*Sebastian Wasiołka, Young Digital Planet S.A., Poland*

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Nowadays information technology plays an important role in everyone's life, whereas knowledge is becoming the most essential factor, being the property of the person who gained it. On the one hand this situation creates an excellent opportunity for young people at the outset of their careers, but on the other hand it presents a significant threat of computer illiteracy.

The opinion that it is not enough to buy hi-tech equipment and software is gaining more and more supporters. What needs to be considered is the feasibility of its implementation and use in an educational facility as well as appropriate instruction of the teaching staff. In many cases this entails the necessity of providing training to the teachers to ensure that they can efficiently use the high technology and new methods of work. This has a direct impact on the quality of education provided to young people, and, what is more, beginning computer science education at an early age facilitates the process of information society formation.

The rapid and continuous development of technology and the Internet has a great influence on the education of young people. Some of the phenomena observed these days include an increase in the number of Internet users as well as inclusion of social groups previously not involved in the Web. This comes as a direct consequence of the widened range of activities available to Internet users.

An educational facility operating in the present circumstances has to promote innovation as one of its essential features. What is needed to achieve and maintain the adequate standard of its operation is ongoing and well-organised monitoring, rather than one-off actions. The ability to constantly generate new solutions has become a necessity.

New teaching methods can only be implemented in an appropriately equipped facility, having the essential infrastructure. That is why the first priority is to equip educational facilities with modern teaching tools, making it possible to transform the existing model of school operation into a network structure.

This article presents a new idea of creating an educational platform for schools, providing access to a group of comprehensive, standardised tools to be used in accordance with the specific type of operation of a given facility, which will provide equal opportunities for educational facilities from different local environments and enable them to operate efficiently and effectively.

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## A RENAISSANCE OF AUDIO: PODCASTING APPROACHES FOR LEARNING ON CAMPUS AND BEYOND

*Palitha Edirisingha, David Hawkrigde, John Fothergill, University of Leicester, United Kingdom*

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We urge practitioners to consider the potential of podcasting for teaching, learning and assessment. Although audio has been proved successful in terms of student learning, especially in distance education (DE), its use has been often undervalued because of the lack of production, recording, distribution and playback facilities for audio, and, for radio, the lack of flexibility of broadcast schedules. Podcasting has changed the position of recorded audio as a medium of learning. A podcast is a digitally recorded sound (or sound with vision) file. The name comes from the Apple iPod, a small, portable player with a huge memory. Podcasting is often applied to the whole of making and using podcasts.

### IMPALA on campus

Our perspective is drawn from research on IMPALA (Informal Mobile Podcasting And Learning Adaptation), involving colleagues in 10 universities in the UK, South Africa and Australia. It started with a pilot at the University of Leicester using podcasting in an undergraduate module in electrical engineering, with 30 campus-based students who studied the module online using the university's Blackboard VLE. The professor changed his "physical" lectures to e-lectures but met the students three times during the module. His weekly podcasts supplemented his online teaching with updated information and guidance on the weekly activities, and motivated his students by relevant news items and a fun item such as a joke. His podcasts complemented the module's e-tivities with summaries and further guidance. Each 10-minute podcast appeared on the VLE at the beginning of the study week, for nine consecutive weeks. Since this module was and is being taught online, it would be fairly easily adapted for distant students. Its approach to using podcasting would be admirably suited to them, helping them to feel a sense of community by 'meeting the prof' in each week's podcast. Difficulties would arise in providing distant students with facilities for tutorials, not in using podcasts.

IMPALA partners created their own podcasting approaches to address their specific teaching and learning challenges. Over 500 students and 20 academic staff have taken part in IMPALA since 2006. The podcasts' impact on students' learning was studied through collecting and analysing qualitative and quantitative data. We present examples of three approaches: 1) helping Kingston University students to prepare presentations and assessed work, 2) offering feedback from staff on Chester University students' assessed work, and 3) assisting Leicester University undergraduates to make the transition from school or college to university.

### IMPALA for distance education

The approach to podcasting at Kingston University would convert well to DE, except that it was helping students in part to hone their presentation skills: distant students seldom if ever have opportunities to present their work face-to-face. It was also helping students to get their portfolios ready to be assessed: that is something distant students on certain courses have to do too, and podcasts would help them. Students, including the student mentors, were asked to help to create podcasts based on their experience. That approach would transfer well to distant students, who could speak up about the problems and solutions they had found, for the benefit of other students new to DE. The approach at Chester University in the UK to using podcasts to give students feedback on assessed work would convert to DE almost without alteration. Distant students would appreciate even more than their campus-based colleagues the spoken feedback from tutors on their work. The podcasts would help to bridge the gap, since in many cases distant students never meet their tutors. The University of Leicester podcasting approach to supporting new undergraduates' transition from school or college to university is very well matched to the needs of distant students, except of course the experiences and advice from students contained in the podcasts would have to be related not to campus-based study but to learning at a distance. Distant students are often older, therefore the transition might be from not having studied for some years to studying at university level away from the campus, using the materials and systems provided.

On the evidence available to date from IMPALA and other studies, we feel confident in predicting that podcasting will be integrated more and more into DE, to the immense benefit of the long distance learner.

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## MODERN ENGINEERING DESIGN EDUCATION BASED ON KaLeP AND STATE-OF-THE-ART ICT SOLUTIONS

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The objective of academic education for mechanical design engineers is to convey qualifications which are necessary for product development in industrial surroundings. The goal of the work described here is to improve engineering design education and to provide a more active learning experience. Design students should be familiarized with modern methods and technologies which they will most likely encounter in their future career. Design cannot be taught sufficiently in lectures alone and requirements on graduates in product development are continuously increasing. Not only professional skills but also social skills as well as proficiency with new technologies and methodologies become increasingly important. For meeting these requirements the Karlsruhe Education Model for Product Development (KaLeP) was developed at the Institute of Product Development (IPEK) at the University of Karlsruhe in Germany. The model consists of three components: Lectures are supplemented by tutorials and project work in which students apply the lecture contents to real problems in a realistic work environment. To solve the design tasks, students are trained in using modern software tools like CAD/PDM systems and wikis in two major design courses. These courses are Machine Design, a pre-diploma course with approx 600 students and Integrated Product Development, a final year design course with 42 selected students. In this contribution we present the KaLeP, the role of modern design tools like CAD/PDM and wikis and the course projects for Machine Design and Integrated Product Development including training concept and the technical and organizational environment in which these courses take place.

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# C-THINKING VIA COMPUTER-SUPPORTED INSTRUCTION

*Ayse Kok, University of Oxford, United Kingdom*

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This conceptual paper presents the fundamentals of complex thinking which is essential for the 21st century learning. First, it compares the traditional online instruction with a dynamic model of learning and then presents the design principles for computer-supported instruction in order for c-thinking (complex thinking) to occur. The paper concludes that by incorporating multiple forms of media such as text, graphics, animation learners can develop different links among units of information so that information is transformed into an n-dimension in contrast to the two dimensional space of print.

## Introduction

In traditional instruction, the learning context is disembedded from ordinary experience whereas theoretical principles rather than situation-specific capabilities are taught based on the curriculum. No modelling of processes by experts exists and learning is compartmentalised by discipline. Derived from this approach, the traditional online instruction is related to an abstract context instead of real-world situations whereas subject matter is divided into modules and presented as text on screen or PowerPoint with a text-based interface rather than objects. Students are given no examples of experts undertaking tasks as student learning is generally contained in the modules presented on the Web (Herrington, Oliver, 2005). On the other hand, in the dynamic model of learning, learning doesn't occur in a linear and sequential way, rather there are constant and unpredictable or unfathomable loops among the learning element interactions. As there are no natural divisions or end points in the learning process, it is continuous.

## Defining Complexity

Complexity theory is concerned with open, non-linear systems and questions how coherent, purposive whole emerges from the interactions of simple and sometimes non-purposive components (Phelps, 2003). According to Phelps (2003), the complexity theory attempts to explain the big consequences of little things. Complexity theory is based upon alternative conceptions of causality, taking into consideration the uncertainty of prediction and the critical dependence of the processes on their initial conditions (Phelps, 2003). From the perspective of complexity, the world is irreducibly complex, not determinist and predictable, and one's task should be to work out complexity in its own right rather than to identify the simple elements of reality underlying complex appearances (Phelps, 2003).

According to Reason and Goodwin (1999), the general characteristics of the complexity can be summarised as follows:

- Rich interconnections: Complex systems have rich patterns of interconnections between diverse components in comparison to the simple systems made up of many components with simple and uniform interconnections.
- Iteration: Novel, emergent form and behaviour arises through cycles of iteration in which a pattern of activity is repeated over and over again giving rise to coherent order. As a result of the interacting elements order arises.
- Emergence: The emerging order in a complex system cannot be predicted from the characteristics of the interconnected components. It can be discovered by operating the iterative cycle.
- Holism: Emergent order is not determined by the properties of a privileged set of components; it is holistic as it is a consequence of the interactions between the various elements of the system. The dynamic relationships that characterise the living being facilitate the emergent order rather than the individual components.
- Fluctuations: As order begins to emerge from chaos the distinctive pattern to the fluctuations in the variables changes.
- Edge of chaos: Living systems are most adaptive when they are settling down at the edge of chaos. Emergent order arises when large fluctuations occur.

Throughout the literature, it is argued that the following considerations should govern the design of computer-supported instructional contexts to promote non-linear thinking:

1. a cognitive and instructionally efficient model of the task,
2. a sound conception of the related domain learning processes,
3. a domain- appropriate social-cognitive concept of teaching, d) a view of the active nature of the learner (Reusser, 2000).

In order for the computational media to realize “intellectual bootstrapping” the following principles should be taken into consideration:

- Computer-based tools should be used and designed as cognitive instructional tools for mindful teachers and learners in a culture of problem-solving. Explicit pedagogical goals can be achieved via use of computers whereas they act as mind-empowering tools and redefine the natural limits of human functioning.
- Computer environments extend and empower the minds of intentional learners by promoting construction activities such as planning, reflection and representation. Rather than providing the knowledge and intelligence to guide learning computer environments should be providing the facilitating structures and tools that enable learners to make maximum use of their own intelligence and become virtually autonomous problem-solvers. Learner autonomy and self-regulation can be fostered in this way.
- Learners should be provided with some guidance according to the principle of minimal help. So, in order to provide effective feedback, the structure of the task and what the student is doing while working on the task must be known.
- Making students construct and externalize their mental models is crucial. Uncovering the hidden and intermediate component steps and products of the learner’s effort after meaning is a major cognitive function of computer-based instructional tools. What has been externally represented, made overt by organizers of thought can then be analyzed and reflected upon by the learner. So, domain-related, representational and procedural tools must be supplied during computer-supported learning.
- Students must be provided with intelligible and effective representational tools of thought and communication as efficient conceptual representation of content is a key issue for both learning and teaching. Learners must be provided with domain ontologies carefully designed conceptualizations of tasks.
- Complementary to providing facilitating representational entities should be procedural assistance, the facilitation of comprehension-related strategies. Meta-cognitive strategies like planning, reflecting should be accompanied by task-specific support.
- Reflective and self-directed learning can be encouraged by making students uncover their knowledge building activities and providing a medium for discussing and reflecting upon one’s thought processes.
- The use of computer-based instructional tools should be extended into a supportive classroom culture of collaborative learning. So, small learning groups or learning partners might look back over each other’s comprehension, reflect by which changes solution paths could be improved, provide patterns of cognitive apprenticeship and refine each other’s mental models of the task (Reusser, 2000).

By taking these principles into account, computer tools can stimulate higher order thinking by requiring the mental involvement of learners rather than doing the thinking for them. By sharing the intellectual burden and freeing the student to engage in higher level ones desirable cognitive residues can be attained.

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# FACILITATING THE ACCESS TO DIGITAL LEARNING RESOURCES BY HARVESTING AND FEDERATION OF LEARNING OBJECT REPOSITORIES

*Fredrik Paulsson, Umeå University, Sweden*

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## Introduction

The rapid growth of digital learning resources has brought forward a number of issues concerning availability, distribution and use. Altogether, the issues are a mix of inter-plaited technological and pedagogical considerations. Some of those issues, mainly related to repositories and the distribution of digital learning resources, are examined and described in this paper. The study presented in the paper focuses on how to *make sure that educational institutions, teachers and learner have a simple and efficient way of locating, packaging and integrating digital learning resource into their learning and teaching as well as into their learning.*

## Method

The study was mainly carried out as an experimental study focusing on providing tools an infrastructure that support the objective expressed above. The purpose of the experimental approach was to interconnect several existing Learning Object Repositories in a network in order to provide one-point of access to digital learning resources. A particular focus was on how resources can be described and indexed using metadata and on how access to digital learning resources can be improved and facilitated through federation and/or harvesting of metadata in order to tie several repositories together to provide a service that offers one single access point – based on the use of metadata.

It was also studied examined how this single access point can be moved closer to the user and the users learning platform (i.e. to the virtual learning environment where digital learning resources are used) by simple federation of the service, enabling access to the network of repositories from any virtual learning environment, web page or portal. The federation was handled by a widget that could be integrated in an easy and straight forward way on any web page. The widget also allowed resources to be filtered in order to filter out resources targeting a specific level, subject or even a specific objective of the curriculum.

The experimental study was carried out in connection to a real-life case where a national service for Learning Object Repositories was implemented for the Swedish school-net.

## Results and discussion

The study concludes in several suggestions for how access to digital learning resources can be enhanced, as well as in the identification of a couple of new issues that need to be addressed by future research, such as metadata quality, widget technology, issues connected to harvesting and federation and the integration with the local learning environment. It was concluded that both federation and harvesting have their respective pros and cons and that it is not possible to give general advices for a best practise approach – the best approach depends on the context. In general it seems like the concept of a widget in connection to this type of Learning Object Repository broker service help facilitating the accessibility and use of digital learning resources. However, the actual results are dependent of the quality of the service, and especially the quality of the metadata in the respective archives, which affects the overall results and by that also the attitude of teachers and students. There is an impending risk that poor quality of metadata that affects the results of queries makes teachers turn somewhere else or not use digital learning resources at all. In general, the concept of repository networks and broker services, such as the Spider, seems to be able to facilitate and increase the use of digital learning resources. However, more research is needed in order to establish that this is the case with certainty.

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## COMMUNITY-BASED MENTORING AND INNOVATING THROUGH WEB 2.0: CHALLENGES AND TENSIONS

*Cristina Costa, Helen Keegan, University of Salford, United Kingdom, Anne Fox, CV2, Denmark*

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### Innovative learning approaches and the role of the teacher

Within an educational context, the rise of what is commonly termed 'Web 2.0' has resulted in increased awareness of the opportunities for creative and innovative approaches to learning that are afforded by network technologies. A shift in education is taking place in which the learner is acquiring a central role when it comes to the processes through which knowledge is constructed, and greater emphasis is also put on the social aspects of the learning process. While access to efficient communication and information technologies is crucial, the roles of those who open up the communication channels for meaningful interactions are no less relevant. On the contrary, the added value of communication technologies, and how these are adopted to bridge meaningful connections, relies on human intervention.

Increasing ICT competences in order to facilitate a culture of lifelong learning has seen the EU-funded VITAE project develop a Web 2.0 teacher trainer course, taking a mentoring approach to developing 21st skills within an intercultural online learning community. Individualized continuous training meets the needs of the individual, enabling teachers to make use of the newest ICT tools (e.g. blogs and wikis) and Web 2.0 to create learning environments which are open, attractive and accessible to everyone. One of the main goals of the VITAE project is to encourage teachers who are frontrunners as regards online facilitation and digital literacy skills to become mentors for colleagues who have not yet started this process, through the sharing of knowledge, e-materials and experiences through virtual fora, between 'experts' and novices alike, supporting active involvement in the process of reflection and interpretation. Alongside the mentoring approach to training the teachers, the other core aspect of the VITAE method is that of nurturing online communities of practice where experiences are shared across cultures and languages.

### Mentoring in an intercultural community

The VITAE mentoring community uses the open social networking platform Ning, which is being widely used in the context of connected learning and community building by an increasing number of educators. The fact that the community is open to a pan-European audience, featuring interaction in different languages, is one of the challenges we face despite its intercultural value: how to bridge cross-cultural conversations when language can be a determinant barrier? By creating Learning Clusters we have opened up new opportunities for the emergence of a multi-lingual community. Although the Learning Clusters have started as part of timed mentoring sessions, these are not restricted to the official course members, nor will the user-generated content be archived with the end of it. The interaction spaces will stay open and ongoing activity will be stimulated. Above all we aim to cultivate a communal spirit of sharing and co-construction of an inter-cultural resource.

In this presentation we will describe the formation and ongoing development of an online community for VET teacher training in the use of Web 2.0, underpinned by the VITAE philosophy, which is that mentoring for 21st century skills is not about being focused on learning about technology per se, but rather to explore the potential of Information and Communication Technologies through collaborative methods, exploratory learning and knowledge sharing in situated, hands-on contexts. Challenges and tensions arise when innovating between institutions where there is a huge diversity of different learning situations. While there is a need for standardization, this also can contradict requirements for innovation. However, by developing frameworks which allow for customization and a degree of flexibility, and shifting the focus from the institution to the learner (and the community), we demonstrate how lifelong learning and competence development can be enabled through mentoring and ICTs.

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## TOWARDS LEARNING OBJECT METADATA QUALITY CONTROL: THE NEXT STEPS

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Nowadays technology enhanced learning is taken for granted in universities, schools, as well as companies. As a consequence of following so called *Open Content Initiatives*, a huge number of learning units is available via the Web. In order to accommodate the ability of finding and reusing, the respective learning content and its standardized descriptive metadata is often stored in e-learning repositories like Ariadne or share.loc. Within the last couple of years many critical research questions have been addressed in this context. To name a few, as a metadata standard LOM was draught, so called LOM bindings and application profiles show how to apply the standard in practice, and interoperability of distributed repositories is enabled with the query interface SQL. To solve the crucial task of generating high quality metadata we have introduced our own strategy: an integrative process of metadata creation, combining automatic analysis, annotations of experts, and community generated metadata in Web 2.0-inspired learning environments. To evaluate and prove our approach of creating metadata, we have applied the *learning object metadata quality metrics* to our system. In particular, quality dimensions such as completeness and consistency have delivered satisfying results. It was obvious to connect other learning platforms hosted at our university the same way; metadata generated in the distributed learning platforms can be send to a central metadata repository.

In this new context with, for the first time, a considerable amount of high quantity and high quality metadata, a new challenge arises: How can we maintain the quality of our metadata over time, and can we keep track of metadata quality, i.e. monitor its evolution? Which applications deliver satisfying metadata in general? Which applications deliver a high quantity and high consistency of metadata? How does metadata change in a certain system along selected dimensions like readability?

At first glance these questions seem to concern a local problem that needs to be solved at our university. However, we imagine that in the future multiple repositories of learning content will need to be able to talk to each other, and that users will search for learning content across repository boundaries. To this end, we need to look at the metadata problem at a more global scale, since the questions above might be of high interest, for example, in an SQL-based repository foundation. In a global context, the person in charge might be interested in questions such as: Which repositories deliver satisfying metadata in general? Which repositories deliver a high quantity and high consistency of metadata? How does metadata change in a given repository along selected dimensions like readability? As an SQL-based query is completely dynamic, the information about a repository's metadata quality needs to be up to date. Moreover, there is a need for a standardized data schema, so that a comparison with certain quality levels can be accomplished. For example, in a repository foundation the average of the completeness quality dimension should always be higher than, say, 40%, so that complex queries can deliver satisfying results.

Therefore, in our full paper we discuss in detail why there is a definite need for research in learning object metadata control, stating the crucial steps to:

- define a common data model for learning object metadata quality metric results,
- define common dimensions of interest within this data model, and
- extend the SQL allowing queries on the data model entries at runtime.

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## PIIK, A COLLABORATIVE NEWS FILTERING SYSTEM FOR AN E-LEARNING COMMUNITY IN HIGHER EDUCATION

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This article explains how a web based social networking system could be conceived to support a techno-pedagogical watch done through an information sharing activity made in communities of Higher Education. The aim of our project is to build up an innovative service, called PIIK, based on social links, between the members of a community, and on their relevance for information filtering and ranking. The fundamental principle and the originality of our project result from the mixture of two Web 2.0 tendencies in a single tool for information discrimination. There are social networks based on the users who wish to learn together by being connected and exchanging information. There are also "social news websites" where no leaders-writers decide which information will be proposed but where the reader-users have this role allowed by a voting system.

A paradox appears from a literature review on social networking. In order to avoid an overflow and a lassitude of people in front of too much information, a community needs a specific service. But the system effectiveness increases when it is possible to have a glance outside our usual friends (sociological weak link hypothesis).

Two principal activities appear in social networking systems: "browsing" (their main use) and "tagging" the links and documents suggested by the community. Doing this, social networking users have three principal purposes: they want to find people for projects and to discuss questions; they want to find more quickly relevant and valid information; they want to be part of communities of "colleagues", to make a watch of a common field. Then the navigation principle of such a web service must be based directly on a visualization which connects the people, their actions and the topics approached by the community.

The exploration of existing tools and Web-services showed that none of them gathers all the PIIK functions or it does not work on the principle brought by PIIK: the classification of the news according to the degree of affinity between the people of the community, where affinity means a kind of friendship based on similar interests. Furthermore, choosing an existing service implies that the information exchanged by a group is not controlled by its members (problem of confidentiality, evolution, sustainability, etc.).

The members of a Swiss e-learning higher education community expressed a great interest for the PIIK service. Their techno-pedagogical watch activity is important and they spend much time searching information about e-learning. These news readers are therefore very interested by a system allowing them easily

1. to access a list of news filtered by people having similar professional interests and
2. to feed the news list with a very simple web browser add-on.

The interviewees were also interested in the identification of specialists (links between people and competences) and they would like to visualise this network through several criteria (vision calculated automatically by the tool, vision according to a manual and personal adaptation, vision according to special interest groups).

Then PIIK should be an efficient techno-pedagogical watch community service if organised as a news feeder based on the principle of affinities between the members and if its basic mechanism of social filtering consists in creating, for each user, a ranking of the members of the social network to serve as a basis for ranking the news. The news feeder list first shows the news coming from my "first best friend", then the ones coming from my "second best friend", and so on. This mechanism focuses the main attention of a PIIK user to news that should be the most interesting for him as they come from people with the highest level of affinity with him. On the other side, the news list remains open, giving access to all the news posted by all the community members. By adapting news ranking to affinities between people, PIIK should bring innovation in the techno-pedagogical watch activity by making the users able to profit from the diversity that exists in jobs and services of different Higher Education institutions, for example in the field of educational technology.

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## MOBI-BLOG: INFORMAL LEARNING THROUGH SOCIAL SOFTWARE TO SUPPORT MOBILE STUDENTS

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Advocates of Web 2.0 and Learning 2.0 suggest that the Internet has already moved from passive publication to active participation and social interaction; that the Internet is one of the major knowledge repositories for personal knowledge acquisition (or informal learning); and will as a consequence put increasing pressure on traditional formal educational systems. It can be furthermore assumed that informal learning is already triggering non-formal or even formal learning processes.

Existing services supporting mobile students apart from administrative and organisational issues are rare and if available normally only easily accessible at the university of origin.

Set against this background Mobi-Blog, the European Weblog Platform for Mobile Students aims at bridging traditional story telling approaches with Web 2.0 applications such as blogs and wikis, at fostering processes of model learning, self reflection and independent decision making of European exchange students and at informally supporting learners in formal Higher Education environments. The direct target users or beneficiaries of the Mobi-Blog services are: students (i.e. future, actual or former); universities, networks and student associations; families and friends of mobile students. In addition there are a number of indirect stakeholders such as policy makers.

The Mobi-Blog methodology is largely based on psychological theories of motivation and learning by and through role models. Differing from other theories of learning, the approach of learning with models explains how complex and difficult tasks, for example driving a car, can be learned. For learning with and from a model it is important that the learner feels the model as realistic and as similar to him/herself. During the learning process of the model, some problems should occur before the aim is achieved. The model should be especially interesting and encouraging for the learner. Additionally examples should refer to single persons (not to institutions), which are as similar to the learner as possible to enable mechanisms of identification with the model.

The added value of Mobi-Blog becomes visible on different levels. The project aims at overcoming mono-institutional approaches. Existing services are often offered by individual universities in a certain country of origin only and related student reports on their experiences of studying abroad are limited to their enrolled students. A European approach is able to offer a much bigger variety of experiences by offering reports from students from different countries of origin reporting on the same target university. Hence, the project offers a possibility for cultural learning by giving the option to compare personal views and experiences of students of different countries, whilst working against xenophobia and racism among Higher Education stakeholders in Europe and beyond.

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# TUTORING AT A DISTANCE, ONLINE TUTORING AND TUTORING IN SECOND LIFE

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## Tutoring at a Distance and Online Tutoring

Research into tutoring at a distance has a fairly long history and the functions of tutors in distance education institutions are well understood. Over the past 20 years research into online tutoring has advanced significantly as such institutions have 'gone electronic': in this paper we cite published research from the UK Open University. Recently, blogs, wikis and podcasts have arrived to supplement established systems like email, virtual learning environments (VLEs, such as Blackboard) and computer (web) conferencing. Ideally, the technology enables online tutors to weave together conference conversations, Web pages and even emails. They do so by acknowledging contributions, synthesising and summarising, drawing threads together, watching for and correcting conversational 'drift', spotting good ideas, opening up new avenues for development, identifying holes in arguments (and patching them), separating opinions from facts, clarifying areas of agreement and disagreement, encouraging further exploration, pointing to valuable sources, promoting selectivity and building patterns.

## Tutoring in Second Life

Very little research has been published so far, however, on tutoring distant students in three-dimensional multi-user virtual environments (3-D MUVES). Distance educators may want to ask whether the best practices from tutoring at a distance and online tutoring can be transferred to these environments, which do *not* resemble VLEs. Second Life (SL), the prime example of a 3-D MUVE is a social environment, not a game. Generally, users are *not* expected by the software to meet objectives, engage in battles or undertake quests and tasks as in most virtual games. SL contains no goal-driven rules: it was not designed with tutoring in mind. Academics seem to be using SL for educational purposes such as virtual laboratories and field trips, problem-based learning, group discussions and design teamwork. Such initiatives try to take into account students' preferences and habits, and, by exploiting aspects of immersion, aim to enrich their learning.

## What is Feasible when Tutoring in Second Life?

Is SL an ideal setting for distance education, and perhaps for tutoring students? To clarify what may or may not be feasible when tutoring in SL, we shall present an onscreen elucidation through avatars, on an island in SL created by the Beyond Distance Research Alliance at the University of Leicester. The island offers a setting for communities of inquiry within which avatars can create and enjoy social, cognitive and teaching presence [to be demonstrated]. The avatars may represent tutors and learners from any part of the globe.

A distance education institution can limit access to its island (or a part of it) to those registered for a particular tutorial, and doing so eases problems of identity and trust that crop up if complete strangers appear out of the blue. As tutors get to know their students' avatars, they may find their own identity and authority challenged, not least because avatars tend to be on equal terms in SL, more so than their owner-users are in real life (RL). Tutors who try to replicate their RL 'full-frontal' teaching style in SL may find themselves at a considerable disadvantage, since presentations can take up to four times as long in SL and student avatars may wander off. If the tutors' avatars are tutoring synchronously worldwide, time differences are a problem: asynchronous sessions have to 'wait' for students' avatars on other continents to contribute. Despite such challenges, SL offers tutors and students considerable advantages. For example, tutors can create in SL artefacts or objects that simply do not exist or are inaccessible in RL, to use for illustration or as the spark for a discussion among avatars.

## Discussion of Opportunities and Challenges

These and other issues are summarised in a handout. Discussion in this EDEN session is likely to focus on the opportunities and challenges inherent in asking students and tutors to meet in such an environment.

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## CREATING NEW VALUE FOR LEARNING USING VIRTUAL REALITY

*Heidi Boetsch-Loewinsohn, Gatlin International LLC, United States of America*

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Virtual reality is no longer limited to video games. Now, educators are turning their classrooms into virtual worlds and are exploring ways this tool can be used to enhance learning. Research has uncovered that at least 300 universities around the world teach courses or conduct research using virtual technology, and it's used in more than 80 percent of universities in the U.K. alone for development, teaching and/or learning activities. Virtual world technologies are being embraced by educators worldwide and are changing the way we use the Internet to learn.

Using virtual reality in education can be the most realistic option. Some course topics require role-play to teach students how to respond in certain situations, but building these real-world scenarios can be costly and isn't always realistically possible. For example, a training course on emergency management needs to visually demonstrate defensive actions in various crisis situations and put students at the front line. Using games or computer animations to do so can be expensive and might contain more entertainment than educational value. The problem that many educators face is finding a low-cost and effective way to produce role-play simulations that cannot be done in real life. Since it is difficult to give students hands-on training, how can educators provide this type of engagement without creating it in the real world? To address the problem, Ms. Boetsch-Loewinsohn of Gatlin International will show attendees how to add value to learning using the virtual platform provided by Second Life.

Launched in 2003, Second Life is a popular Internet-based virtual reality program. It creates a 3D interactive world which resembles console video games, but is almost entirely built and influenced by the people who use it. In Second Life, participants use a customizable character, or avatar, to explore thousands of places to visit, build and interact with the world and other users. In education, Second Life's digital world offers a low-cost environment for building role-play movies, allowing educators to immerse students in real-life experiences and allow them to act according to what they have learned.

This presentation will look at how the education industry has incorporated Second Life into teaching. Today, hundreds of colleges, universities and e-learning providers use the virtual platform to teach subjects such as science, interior design, hospitality management, architectural design, urban planning, legal practice and real estate. Second Life is also used for research and as a way for instructors to hold office hours, meeting with students in the online world to save travel costs.

The benefits of using Second Life are numerous. Virtual reality adds interactive role-play to courses and appeals to both web-savvy students and first-time e-learners. Educators can also save time and money by utilizing the virtual platform provided by Second Life since the program is free to join. In this presentation, Ms. Boetsch-Loewinsohn will use Gatlin International's Emergency Management online course to demonstrate using the cutting-edge technology to produce compelling courses that immerse students into real-life scenarios, thus enhancing their learning experience.

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# SECOND LIFE FOR ARCHAEOLOGY, DIGITAL PHOTOGRAPHY AND MEDIA AND COMMUNICATIONS EDUCATION THREE CASE STUDIES

*Ming Nie, Palitha Edirisingha, Matthew Wheeler*  
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## Introduction

Second Life is the most popular and widely used 3-D Multi User Virtual Environment (3-D MUVE) by far. There is a growing interest in using 3-D MUVES for teaching and learning in Higher Education (HE). Over 300 universities, mostly in the UK and the US have established virtual island in SL so far (Salmon & Hawkrige, 2009). However, research into 3-D MUVES for HE is still in its early stage. Most of the research tends to be based on small-scale experiments. We urgently need to develop pedagogical models in supporting and enhancing students' learning through 3D MUVES.

This article reports on three case studies of integrating SL into three disciplines: Archaeology, Digital Photography and Media and Communications. The studies are conducted by Beyond Distance Research Alliance at University of Leicester, UK within a JISC (The Joint Information Systems Committee) funded research project called MOOSE: MOdelling Of Secondlife Environment ([www.le.ac.uk/beyonddistance/moose/](http://www.le.ac.uk/beyonddistance/moose/)). This article demonstrates three different approaches to use SL to support three different disciplines. Within each case study, we introduce how SL can be used to address a particular teaching and learning challenge faced by the course; we demonstrate how SL can be used in a more productive way to enhance student learning the subject area; we describe the design of activities in SL (SL-tivities) and development of artefacts within the University of Leicester's Media Zoo island in SL (<http://slurl.com/secondlife/Media%20Zoo/170/150/17>); and we discuss key results from research based on student learning experience in SL.

## Methodology

We conducted research with students and tutors from three courses at two HE institutions. Student and tutor engagement with SL-tivities were researched using qualitative methods. Data was captured in a number of ways. We conducted semi-structured interviews with students and tutors. We recorded chat logs and took observation notes from each teaching session in SL for further analysis. Data analysis is based on a methodology called cognitive mapping to create unique 'maps' of individuals and groups and their change in views, feelings and experiences over time. The methodology is grounded in Kelly's theories of personal constructs (Kelly, 1955).

## Conclusion and future work

Three pilot studies contributed to knowledge in substantive and overlapping areas. These include: 'socialisation' and 'social presence' in 3-D MUVE and their role in supporting learning at a distance, 'identity' and 'sub-cultures' issues in SL, learning through role-play and simulations, and new pedagogies and literacy in immersive environments.

Three pilot studies also contributed to the reservoir of understating of how SL can be used for formal teaching and learning in HE. This empirical knowledge and research to practice approaches developed in MOOSE has contributed to the redesigning of the distance delivery of two postgraduate courses: Psychology and Education at University of Leicester. Course teams are currently examining MOOSE approaches to improve the learning experience of about 200 students distributed around the world. Specific approaches under consideration are: SL for role-playing, induction and dissertation supervision.

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# THE USE OF VIRTUAL REALITY FOR PEDAGOGICAL VISITS IN MUSEUMS AND GALLERIES: THE CASE OF 360 PANORAMAS

*George Kavouklis, Costas Tsolakidis, University of the Aegean, Greece*

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## The main principle

Educational curricula acknowledge the value of museums -specifically on issues of history and culture- and this is why they include visits in relevant places. The main point in this paper is that a specific form of Virtual Reality (VR), in particular 360° Panoramas can contribute successfully in the effect that museums and galleries have in education.

Such an application makes the contents of these institutions available for studying, not only to visitors before and after an actual visit, but also to people that either do not have any chance to visit the museum (they are far or isolated) or because such a visit includes organizational difficulties that cannot be easily overcome.

Panoramas are produced by taking a sequence of pictures, overlapping the individual pictures by a certain percentage. With this method, the camera is turned by a specific angle to the position where the next picture is to be taken until an entire 360° revolution has been completed.

## Technology used

For this project, a Canon D40 digital camera was used with a Sigma 8mm fish eye lens for the panoramic images and a Canon D20 with a 18-55 normal lens for conventional shots. The camera was mounted on a professional tripod fix with a special panoramic head set. Every panoramic photo consists in average of 15-18 snapshots taken from one point of view in a 360° circle. Together with the above, FPP (Flash Panoramas Player) software, an Adobe Flash based panorama was used showing the environment. This uses XML files to employ interactivity and controls all media embedded or called upon, during the viewing experience.

Hot spots greatly enhanced the operability of the entire setup since they provided:

- Advancement to a new position in a room or in another room (a new set of images forming a new 360° panorama).
- Zoom in on a painting, to display it on a level perpendicular to the line of view of the user of the facility for inspection and analysis. By clicking on a designated area, one can trigger the presentation of an item e.g. a painting. Interactivity is enhanced by enabling icons to be embedded within the interface thereby providing access to a variety of learning objects.
- Information displayed on the screen in the form of a window or a flip book.

The Museum of Modern Art of Rhodes was inaugurated in 1964. It houses a large collection of Greek masterpieces of art, since the 15th century, including collections of paintings, engravings, historical relics, documents and photographs. The second floor of the museum was selected since it contains works of Modern Greek painters and the displayed material was related to the educational curriculum of the 6<sup>th</sup> year of primary school and of the high school. The area was photographed and a few 360° panoramas were created for this area. Also, conventional photos of the paintings were taken to display in detail each individual item. The navigation within the entire floor was performed with (a) the use of the mouse or the arrows that allow rotating and zooming in any direction giving the impression of motion for a limited area and (b) with the use of hot spots that allow transferring the viewer to new position (to a new panorama).

## Results

VR panorama learning environments are expected to help in introducing highly individualized and more efficient ways of teaching in a classroom or in applying distant learning scenarios. Working with virtual models and simulations allows for more illustrative and practice-oriented teaching. These technologies, with the use of appropriate educational scenarios can support lifelong learning, collaborative learning and personal knowledge exchange. However, effective learning requires carefully structured virtual museums and galleries that meet the different requirements by students and practitioners.

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## A DIGITALLY ENHANCED LEARNER-FOCUSED MODEL OF INTERNATIONALIZATION

*Rosie Crane, Pat Gannon-Leary, Northumbria University, United Kingdom*

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As the EDEN Gdansk conference call says,

*“An organizational culture supporting openness and creativity is a precondition for successful learning and innovation.”*

One of the aims of Northumbria University's Learning and Teaching Strategy is to:

*“Recruit and retain students and staff drawn from all sectors of the international community, engaging and developing them to their full potential.”*

As regards the Schools within the University, for example, the Newcastle Business School (NBS) website says, with reference to 'a truly international experience':

*“At our campus in Newcastle city centre we welcome students from all over the world bringing a rich multicultural diversity to our programmes and social activities as well as the unique opportunity to share broader perspectives.”*

Moreover, in Computing Awards for Excellence 2006, the university was named one of the top three most IT enabled organisations in the UK, by the Journal of Computing.

These quotes are particularly apposite with reference to the research reported in this paper, the aims of which was to explore the use of digital and ICT tools available and capitalize on the multicultural diversity of the student body by affording staff and subsequently international students an opportunity to share their knowledge and prior learning experience with the wider community. It was anticipated that the project, which has a number of themes would increase awareness of staff and students of learning cultures internationally and facilitate the means by which work could be shared electronically through a variety of digital media.

In the past, much research into international students and internationalisation has been conducted but the findings have not been widely disseminated within the institution. Indeed, it has been the case that several different schools and services within the University have conducted similar research unknown to each other. Hence, it was recognised that there was a strong interest and need to establish a community of practice of staff with shared interest in and experience of internationalisation. The University Learning and Teaching Enhancement support, has two working groups, an International Learning Enhancement Group and a Diversity Enhancement Group. Through collaborative working, the research and development of an electronic means of dissemination and communication was initiated. This ultimately emerged as a digital repository for staff to post material and share completed work and work in progress and will be discussed in this paper.

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## SCHOOL LIBRARIES

### CAPITALIZING E-LEARNING POSSIBILITIES TOWARDS NEW CHALLENGES

*Odília Baleiro, Rosa Canhoto Martins, School Libraries Network Office, Portugal*

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The School Libraries Network Program (SLNP) was created in 1996 by the Ministry of Education aiming at installing and developing School Libraries, conceived as multimedia resource centres in schools of all levels. This Program is co-ordinated by the School Libraries Network Office (SLNO) which operates in articulation with other services of the Ministry of Education, Regional Administration Services and with local authorities, in particular through Public Libraries. After twelve years this Program has already a coverage of all Basic and Secondary Schools with libraries installed and carries on with one of its principles – to built and empower the NET based on two main objectives: training and partnerships.

Managing changes are responsibilities of all institutions in today's society, so SLNO has been developing an intensive collaborative work through regional and national programs and institutions which add value through the resources they provide, either informational or technological, such as the National Reading Plan, Training Institutions, Public Libraries, Schools, Technological Plan, etc. Technological Plan, launched in 2006, is an action agenda for all the Portuguese society, which aims at mobilizing enterprises, families and institutions for surpassing the modernization challenges the country has been facing during the last years. Within this context, the Portuguese Government has assumed the Technological Plan as a priority in the implementation of its public policies.

The Information Era claims for a complex symbiosis of learning's and skills. School Libraries have a potential of resources, now profiting from new equipments brought about Technological Plan, which facilitates to use new learning environments to which everyone should be prepared to work with. There has been given special attention to training to respond the abilities required to such a technological world in which information and digital skills are core issues to deal with in a knowledge-based society and be able to work with students based on constructivist approaches. So, since 2007 new models and alternative spaces of training have been set up by SLNO addressed to people working in different institutions on a variety of issues:

#### **To who?**

1. Teacher librarian/teams
2. School libraries collaborators/experts
3. All teachers

#### **About what?**

1. School library and Web 2.0
2. Self-evaluation Model on School Libraries
3. E-trainers for School Libraries

So far, SLNO has already involved about 1,000 trainees who are now familiarized with distance courses, throughout Virtual Learning Environments (VLE) and get to know and work with a variety of technological and software tools which provide them new skills, namely in digital and informational contexts. This strategy brought about new environments, different contexts and diverse formats of learning, such as communities of practice and learning communities regarding related subjects which are interest of working groups: information and digital literacy, Web 2.0 tools, evaluation, reading programs, union cataloguing, etc.

- Organize SLNO information and schools work rich and valuable in information and technological displays, by providing access to portals, directories, school library cataloguing, etc.;
- Develop social nets: communities of practice and learning communities among school librarians and other teachers with the same interests and to show best practices;
- Design strategies in schools to promote collaborative work among teachers, by using Virtual Learning Environments (VLE);
- Explore WEB 2.0 tools, either in teacher's learning processes, or in the classroom context/other activities with students, for example, blogs and wikis, podcasts, etc;
- Become schools world wide places out of its borders.

Evidence of this work is available in School Library Network Office website <http://www.rbe.min-edu.pt/>. Technological Plan strategies in <http://www.escola.gov.pt/inicio.asp>. Both websites are useful baselines to support (auto)training to trainers and trainees by promoting and exploring ICT tools as well.

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# A NEW CONCEPTUAL APPROACH TO CREATIVE E-COURSE MODEL DESIGN IN ENGLISH FOR ENGINEERING STUDENTS

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## Introduction

The research project pursued the goal of integrating creative learning methodology with e-learning in the online course of English for Specific Purposes (ESP). Creative e-learning, was defined as the integration of creative learning methodology with e-learning facilities to promote creative abilities of the target audience.

## Aims of the study

The basic aims of the study included

1. analysis of the main methodological approaches to developing creativity and integration of ICT facilities with creative e-learning, especially in learning languages
2. development of an online course design and delivery approach to creative learning of ESP for engineering students on the basis of the cultural-historical activity theory; design of the online course content (texts, audio-visual material, online tests, creative thinking techniques, tasks and problem solving situations)
3. implementation of the online course delivery and analysis of the project results.

## Methodological approach

In the present research creativity is interpreted as the ability to produce novel (original/unexpected) work that is high in quality and is appropriate (useful). The criteria developed for the design and delivery of a creative e-course in ESP included 1) the course content; 2) creative process support (creative thinking tools, techniques and software); 3) course administration (selection of the learning content, user support, software environment and assessment techniques).

According to Vygotsky, the founder of the cultural-historical theory, creativity is understood in terms of collaboration and interaction. The transforming process depends upon cooperative labour, social interactions, and external and internal tools within the 'zone of proximal development'. The above conceptual approach adapted in the e-course included 1) the selection of a challenging, motivating and meaningful study content corresponding to the professional needs and interests of the students taking into account the dynamic development of the professional area of the students, as well as the student age specifics, their individual peculiarities and English language proficiency; 2) structuring of the study content (implementation of the deductive approach, pointing out the core units, development of a flexible module system, concept maps, etc.); 3) selection of the problem solving tasks and situations based on a contradiction; 4) providing tools for creative solutions and scaffolding where necessary. The Blackboard (Blackboard Inc.) software environment was used for the delivery of the learning material, basic performance assessment, user support, task information, and task feedback, while ThinkTank™ (Groupsystems company) and Zing (Zing Technologies Pty, Ltd.) team learning tools were primarily used for creative collaborative problem solving. A total of 43 first-year students of the Faculty of Electrical and Power Engineering, RTU, took part in the course. The paper illustrates the tasks and the problem solving process by the students in greater detail.

## Results and conclusions

Observations in the face-to-face ESP classes, as well as analysis of the results of the online tasks allow to conclude that applying the methodological principles of cultural-historical activity theory in the selection and organization of the e-course content and providing a student-centered pedagogical environment promoted student creativity and ESP proficiency. The integration of ThinkTank and advanced Zing team learning tools in problem solving considerably helped the students interact and create new knowledge online by working together.

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## CREATIVITY AND INNOVATION IN LEARNING: THE CHANGING ROLES OF ICT

*Mehmet Kesim, Anadolu University, Turkey*

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It has been argued by Thomas Friedman that globalization have flattened the world by reducing barriers among states, individuals and corporations. This indicates the constant growth and expansion that is taking place, binding every aspect of the world we live in. In such an expanding world, creativity carries utmost importance, which can be considered as a prerequisite for innovation.

In today's knowledge-based digital society, new and innovative learning approaches must be developed to ensure that both teachers and parents are provided with clear and applicable teaching guidelines and continuous teacher training. Pedagogically and didactically innovative approaches allow for better employment, self development and participation in a transforming society. ICTs take part in this approach by their capability to support individual and personalized learning, in which learners are not merely recipients of knowledge but are builders of the knowledge as well (SEC 2008, 2629 final, p. 11). Together with the shift to a digital society, technological innovation has resulted in the ability to utilize various tools for the establishment of new learning environments. The advanced networking capabilities and personalization options of new technologies allow various tools to act as gateways to new mobile learning environments. In this regard, the uses and impact of ICTs in education and training will also be compounded through organizational change, inciting growing e-maturity.

In order to share a knowledge sharing organization, an adaptive, dynamic, responsive, self-organizing, diverse and alive environment is needed. Within the scope of the connectivist understanding of learning, informal learning is considered as a key element to providing the flow of information in connected societies. Considering that the key element of learning in such societies is the establishment of connections, the available infrastructure and new developments in ICTs provide the technical tools necessary for addressing the changes taking place in learning ecologies.

The notions of information, communication and technology constitute the underlying structure of the term ICT. While these elements have instigated change, the use of them has also incited change in a way that the notions of **Innovation, Collaboration and Transformation** have become keys to the application of ICTs. (Trilling, 2005, p. 40) Similar to this new ICT triangle, the knowledge triangle addresses the issue of innovation as well. The knowledge triangle, consisting of education, research and innovation, is crucial to support personal and organizational development. The critical issue is that innovation intersects with both the new ICT triangle and the knowledge triangle. Any discussion regarding the relationship between the new ICT and knowledge would cover a very broad scope, including the relationships between education and society, and the interaction between knowledge and innovation. Under such circumstances, where such vast areas must be covered simultaneously; creativity, innovation and education will most likely be in the agenda of European education for a long time. As social changes take place towards a digital society, pre-established social connections have also been transferred and somewhat transformed into the digital domain. In this regard, e-learning seems to have a crucial role to succeed in keeping pace with the constant change.

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## A COLLABORATIVE PLATFORM FOR DESIGNING UBIQUITOUS LEARNING

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In contrast to formal education that charges expensive tuition fees in Japan, non-formal education, which is defined by UNESCO as 'learning embedded in planned, organized and sustained education activities that are outside formal education institutions, responding to education needs for persons of all ages', requires initiative by learners and encouragement by communities. This framework initiates collaborative and autonomous learning and sustains it until we can achieve satisfactory outcomes such as knowledge and competencies useful for enhancing professional careers and enriching learners' daily lives. A country such as Japan, which requires high tuition fees for quality higher education, is excluding people in poverty and marginalized and vulnerable citizens from traditional routes of education that might improve their quality of life.

The conventional method of instructional design requires teachers to decide instructional objectives, content, learning spaces and facilities needed for their instruction in advance. Ubiquitous learning, on the other hand, does not require prior, conclusive decisions concerning such educational components. Learners can select topics, programs, objectives, conditions and other components. Despite such flexibility, designers of ubiquitous learning in non-formal education have to make assumptions about learners' interests, background knowledge, learning environments and other influential factors to produce effective learning outcomes and tangible materials for effective learning. This may be problematic for teachers used to conventional, fixed ways of initiating instruction in accordance with their aims, beliefs, intentions and instructional objectives. It is also hard to change their perceptions of students from the perspective of teaching to that of learning and their framework of initiating lesson plans from a logical sequence of subjects to intuitive procedures during the learning process.

At the very earliest stage of developing ubiquitous learning, we have only ambiguous ideas in our mind, which we can best describe by referring to other examples. In other words, these are metaphors. The reciprocal sequence for designing ubiquitous learning consists of metaphors, images, models, instructional propositions, propositional attitude, pedagogical actions, analysis and inter-subjective interpretation of the students' activities and outcomes after the lesson. Original design often emerges from very ambiguous, intuitive and unique ideas, not from an established, rigid framework of instructional technology. Referring to the tacit knowledge accumulated from previous experiences, learning designers develop their concepts and realize them through thoughtful preparation and organization of learning events and appropriate pedagogical actions. This conceptual framework emerged gradually from past experiences in designing large-sized classes of ordinary university education and is summarized into three phases for developing ubiquitous learning materials.

In the first phase, an image for the linear sequential procedure is formed for producing learning outcomes. A conventional textbook is the major common source of information. Students learn in group sharing their responsibilities, and guided by teacher only when it is needed. After assessing the outcome and records in the first phases, we drastically changed the structure to one that was problem-oriented. The lesson starts from students' awareness of problems and proceeded to team learning to prepare presentations to other classmates. At this phase, we realized the importance of the early units to create more productive outcomes. We introduced a step in which students assessed their tentative reports mutually with team members and refined them to complete their final outcomes. This second phase could not accommodate enough the diversities among learners. We proceeded to the third phase of learning development. Learning designers focus their attention on learners' intentions, learning processes and outcomes, not on designers' objectives. In this context, a set of propositions are derived not only from objective analysis, but also from subjective and/or inter-subjective interpretation of learning processes. A spiral growth model of a teacher is implemented in a teacher training course. We are now preparing other courses to provide professional qualification certificates for a large number of unemployed people.

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## SCAFFOLDING PROFESSIONAL DISCOURSE THROUGH COGNITIVE TOOLS: THE MAPIT DISCUSSION ENVIRONMENT IN TWO DIFFERENT SOCIOCULTURAL SETTINGS

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ICT based educational inventions for tomorrow should be inclusive – they should be accessible both for Digital Novices and Natives and provide solutions for the improvement of learning culture as a whole, not just knowledge, skills and competences of learners. In higher education, policy-driven efforts to increase access result in expanded communities of learners who rarely experience the motivating atmosphere of professional debates during their formative years. In training on the job, mentoring for innovation is a process of confrontations: traditional and new values, content and methodology are contrasted. Through mentoring, learners interpret and, if convinced, accept and acquire a new knowledge. When constructing a blended learning environment for pre- and in-service training courses at Eötvös University, we have included Map-It, a new visual knowledge mediator software and found it useful both for experienced, young ICT users and middle-aged newcomers to e-learning.

The main purpose of the Map-It tool is mapping a meeting in the form of a multimedia document that features the sequence of contributions, not only the texts and comments but also an audio or video recording of the meeting session, with text files and images used and web sites visited during the discussions. The map of the conversation, graphically recorded by the tool, represents the flow and the directions of the contributions of various participants, and can be used as a reliable reference after finishing the conversation. In fact, it is this combination of the map, its contents (textual contributions, links to URLs, attachments, etc.) and a map-based, conveniently accessible audio/video recording, what can be seen as the “Map-It-generated comprehensive minutes” of the discussion. The discussion map helps to reconstruct – also for non-participants – major occurrences of the session, shows exactly who contributed what and when, which contribution elicited more reactions. It also reveals the flow of ideas and indicates “dead alleys” or heated confrontations during the meeting. The map is synchronised with the oral (and eventual video) recording of the session and facilitates the recall of any given segment.

Our sample included 23 undergraduate students (age range 20-23, average to excellent ICT skills, course taught: Cultural Studies), 11 PhD students (age range: 22-25, excellent ICT skills, course taught: “ICT in Education”) and 8 primary school teachers (age range: 22-25, poor ICT skills, course taught: “Collaborative Teaching Methodology”) and training lasted 2 semesters (from September 2007 to June 2008). Map-It was used both online as a discussion support environment and offline, for note taking. As the tool is based on the triological learning paradigm characterised by work around shared knowledge objects by a team of mentors, mentees and other professionals with relevant expertise for a learning task, we managed to *increase learning motivation, improve collaborative skills and increase self-respect of learners as capable professionals at the same time*. (Pre- and post hoc motivation and self esteem surveys and assessment of collaborative tasks were used to evaluate performance.)

The tool was found useful also as a flexible mind mapping application that visualises threads of discourse in relation to predefined thematic areas. In future experiments, we intend to integrate the tool with Web 2.0 applications to create a *network of personalised learning* environments that can, at the same time, accommodate large number of participating students – a solution that all universities that are obliged to accept an ever-growing number of learners must invent for tomorrow.

In future experiments, we intend to integrate the tool with open source educational software like Moodle, class LMS portals, e-portfolio systems, and Web 2.0 applications like Google Docs, Sites as well as social networking sites like Facebook. Our objective is to create a *network of personalised learning* environments that can, at the same time, accommodate large number of participating students – a solution that all universities that are obliged to accept an ever-growing number of learners must invent for tomorrow.

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# I-PETER II – A HYBRID COLLABORATIVE AND INDIVIDUAL ENVIRONMENT FOR THE DISTANCE LEARNING OF BUSINESS ENGLISH

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## Summary

This paper presents the work that has been carried out by a group of researchers at UNED. The group ATLAS (Artificial Intelligence Techniques for Linguistic Applications) has focused their research for the last few years on ways to learn business English with a computer (Read et al., 2002), and on the integration of two types of learning, collaborative and individual. They have developed a novel CALL program, I-PETER II, using learning methodologies which incentivize the collaboration among individuals in order to learn.

## Introduction

Collaborative learning has been used in classrooms since the 70s, although most of the theoretical studies were carried out in the 80s with the development of e-learning. The application to real computer systems is not without its difficulties because basic investigation is always ahead of specific applications and computer implementations. Problems of scaling arise and discoveries and advances are not always practical in the commercial sense. GEROLINE (Heift & Schulze, 2003) and GRACILE (Ayala & Yano, 1996) are among the collaborative systems designed and developed in the last few years. The first is centred on collaboration based on the exchange of knowledge between the students and the instructor, and the evaluation is carried out through automatic tests. The second one, GRACILE, is designed for the students to practice only written language.

Collaboration is not the only choice and some experimental teaching projects have been presented recently which suggest that the most effective method to encourage learning is through a combination of individual and collaborative learning techniques, based in groups (Cortright et al., 2003, 2005). This research is centred on looking for a way to reconcile the debate concerning the individual or the social nature of human cognition, defended by figures such as Piaget (1968) and Vygotsky (1978). The ATLAS research group maintains that this distinction between the individual and social levels of cognition must be diffused.

## I-PETER II

The first step taken towards the development of I-PETER II was the drafting of the basis of a theoretical framework based on a cognitive and social constructivist paradigm, and a notional-functional didactic programme based on the European Framework of Reference for Languages: Learning, Teaching, Assessment (Council of Europe, 2001), as well as an original application of ICALL techniques (mainly dominium, student and group modelling diagnoses based on Bayesian networks, adaptive material selection and also adaptive group guidelines). The functional integration of these features constitutes an effective focus for what was the group's specific expertise – professional distance English learning. The improvement that was anticipated (and has since been realised), is not only in terms of both passive and receptive reading and oral comprehensions (controlled in closed exercises as in most CALL systems), but also in both writing and oral production, not just as discrete linguistic interventions, but integrated into conversation and correspondence. Any modern theoretical framework of this type requires three fundamental pillars: the pedagogical, the linguistic and the technological orders. As a consequence, in order to design the framework these three aspects have been considered separately within our group before definitely integrating them into the whole.

The system works in the following way: initially the learning takes place on an individual basis with the student undertaking simple activities on a specific topic which forms part of the notional-functional didactic programme. These activities are mainly closed and as a result are automatically evaluated. Once there is evidence that prototypical conceptual learning is happening, collaboration commences for the same topic, with more complex activities which normally entail several related tasks. Students who work together must be able to reach a common understanding which naturally requires communication in English among the participants in the activity. The application of these strategies reinforces the previous individual learning and gives way to the future individual study of the following unit.

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# IMPLEMENTATION OF SOCIAL FEATURES IN A DOMAIN-SPECIFIC PORTAL ABOUT E-LEARNING

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The evolution of Internet towards a more participative and social environment has been the trend during recent years. Social software, cloud-computing, web mashups and ubiquitous computing have changed the way create and consume information. As a result, new models of communication and information management are challenging traditional communication media. Dissemination activities supported on domain-specific web portals (DSP) need to adapt to this new scenario. We will define the new strategy for Pulsar (<http://pulsar.ehu.es>), a domain-specific portal devoted to the dissemination of news, trends and best practices in the field of e-learning. Next, we describe the steps that we have followed for transforming a procedure based on an editorial model, where experts select and broadcast content to a community of passive readers, into a new approach introducing social features. Finally, we make some global considerations about this transformation process and we lay out the plans we have for our future work

## Dissemination in the Read/Write Web Scenario

A Web portal is a comprehensive collection of digital resources. Domain-specific portals have a domain focus and represent a gateway to the information in Internet of a particular area of knowledge and have a widespread use in institutional policies for the promotion and dissemination of best practices, innovation and R&D. The new read/write Web scenario recommends exploring new ways of managing, analyzing and disseminating information that enable more fluid data flow and foster user interaction. On the one hand, different platforms such as social media sites or blogging tools have succeeded to create valuable services based on content created outside professional routines and practices that are ranked amongst the most popular web sites. On the other hand, there is a shift from a Web based on the content to a Web based on the people, from an organization depending on subjects and publishers to an organization based on networks. All these services are giving shape to new mechanisms for filtering and selecting the information we consume where personal networks and community play an important role.

Adapting the process and tools of the dissemination activity to the new scenario is based on three basic assumptions. Firstly, the feature design has to provide an attractive set of tools for users enabling them to manage information, to publish their content, share it with peers and participate in discussions. This is carried out by a structure of information channels that allows distributing any specific data between services and users, and, as a result, among users. Secondly, the structure of information channels deployed on the domain-specific portal need to be integrated within the cloud of loosely-coupled services the Web is built upon. Thirdly, the architecture of the site has to bring out the value of the distributed contributions of the online community, by highlighting related affinities and content, defining an intuitive navigation and fostering discussion.

## Setting the Environment

The process of building the virtual environment is divided in 4 phases: building a list of feature requirements, selecting a Course Management System (CMS) matching with those requirements, building the features and customizing the user interface (UI). The set of affordances required include some basic CMS features, such as the management of roles, permission, profiles, layout, visual HTML editors, internal search and basic navigation features and other more specific such as tagging and rating systems, Digital identity support with OpenID and LDAP, flexible syndication system allowing users to personalize their feeds, Web 2.0 sharing affordances and social network features enabling users to set contacts. In order to select the most suitable CMS we have carried out a systematic revision of the fulfilment of these requirements in the most active open course projects: Joomla!, Wordpress and Drupal. Eventually, Drupal 5 was chosen because it obtained the best scores in the social and advanced aggregation features. The process of implementing the majority of the listed features has not required the development of new code, but a large number of community contributed modules have been necessary. Most of the settings have been carried out using the administration web interface. The user interface has been to keep a balance between a classical navigation structure based on sections and navigation based on others elements that are transversal to these sections: tags, popular content, etc. Users' contributions have an important role in defining this second kind of navigation and therefore it will have an important social component.

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## BEYOND THE TECHNOLOGY: DEVELOPING INNOVATIVE GLOBAL AND EUROPEAN PARTNERSHIPS

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### Introduction

This central theme of this paper is that amidst the current financial crises facing European higher education the central strategy for the future is through collaboration and building long-term sustainable partnerships across the European continent. In many European countries there are innovative models of institutions working more closely in collaboration within their own countries and across borders. Competition will continue in the future but it will be a new kind of competition that promotes sustainable partnerships over competitive self-serving strategies that often are driven primarily by projected economic returns. Distance learning is an important component of building these partnerships yet it must be balanced with other critical assessments and considerations.

### Recommended Strategies for Cross-Border Distance Education

- Do your homework! Knowledge is power and just good common sense. Research proven strategies, effectiveness, and success of institutions that are engaged in global distance learning. What have they learned that you should know? What mistakes can you avoid and what best practices could work for your program.
- Why are you considering cross-border higher education? What are the benefits?
- Minimize financial risks. Explore partnerships with other organizations.
- Build consensus and support on campus and align your plan with institutional mission.
- Start slowly and implement in phases so you can assess progress and make changes.
- Ensure student support services is part of every conversation, these are critical.
- Make sure experienced bi-lingual leaders are leading your negotiating team.
- Deliver your most reputable programs even if you compete with others.
- Commensurate quality and student learning outcomes with your campus programs.
- Inventory your technological arsenal – what are your strengths, what is missing?
- Build some type of physical presences in the host country.
- Do not presume you know the key issues for your foreign students, home and abroad.

(Connelly, Garton & Olsen 2006; McBurnie & Ziguras 2007; Olcott 2007)

### Summary

The global higher education environment is rapidly changing and market forecasting and projections are difficult under the most optimum conditions. The market will be even more uncertain given the foreseeable financial crises facing most regions of the world. Universities entering the European and/or global distance learning market must be prepared to balance the perceived opportunities and benefits with the real challenges of regional and international delivery. Indeed, within the current economic climate, building innovative and sustainable strategic partnerships is the most viable strategy with the least risk and most rewards.

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## THE NEXT GENERATION OF LEARNING TECHNOLOGY STANDARDS

*Rob Abel, IMS Global Learning Consortium, United States of America*

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### The Challenge

Technology is gradually making its way into the mainstream of distance learning around the globe. In many nations online learning is affecting significant portions of the higher education segment. The suppliers of new educational technologies are moving from basic learning administration and content distribution (“course management”) to a focus on helping students learn and professors teach. Yet, lack of seamless integration of new technologies into the educational context results in greater effort and cost – limiting adoption of new technology to a relatively small minority of innovative professors.

Seamless integration of new learning technologies moving forward requires that a transition occur. The most important transitions moving forward that need to be supported by standards bodies are:

- Availability of new digital content alternatives for teachers and learners.
- A wide variety of digital collaborative and social network applications.
- A desire by institutions, teachers, and students to achieve a better understanding of learning outcomes.
- Creating a scalable environment in which personalized learning can be facilitated.
- Hybrid Information & Communication Technology (ICT) environments that combine web-based applications (“cloud computing”) with enterprise-based systems.
- Redesigning teaching and learning experiences to take advantage of new technologies that can achieve measurable impact.

### The Next Generation

As we transition from “technology as infrastructure” to “technology as teaching and learning facilitator” a new collaboration to develop “standards” is needed. Standards are often perceived as the tried and true, locked down agreements that suppliers can build to in order to save investment in areas that do not provide a competitive advantage. And this is true. But, to fully comprehend what is needed, one must understand the importance of standards in providing a platform for distributed and scalable innovation. Now is the right time for standards to play this role in addressing the most critical global education challenges of access, affordability and quality. Most importantly, standards can help a wider population of education providers address and improve what has been the historical tradeoffs between access, affordability, and quality.

The IMS Global Learning Consortium is a non-profit collaboration among the world's leading distance and online education providers, educational technology product companies, and educational publishers. The members collaborate on projects to enable faster progress in the large-scale adoption of new technologies that can have a measurable impact on access, affordability, and quality. The workgroups cover both interoperability standards and adoption practice standards. Interoperability standards enable the mixing of a wide variety of products and technologies to achieve a seamless teaching and learning experience. Lowering the cost of seamless teaching and learning experiences is key to spreading innovation in the education segment. Adoption practice standards focus on the processes required to successfully implement new technologies at scale. Adoption practice workgroups are focused on achieving higher quality teaching and learning experiences by capturing best practice in a form that is certifiable.

As we move into the next generation of education with greater support from technology it is essential that institutions and suppliers collaborate worldwide to prove that investment in this area can help institutions and governments around the world overcome historical capacity issues. Collaboration on interoperability and adoption practice standards is one critical component that will help increase the opportunity and results for all participating parties. Leaders such as University Maryland University College, Penn State, University of Michigan, The Open University UK, Open University Netherlands, Open University Catalonia, Athabasca University, the California University State System, the University of California System, and Capella University, among many others are already leading the way through the unique IMS Global Learning Consortium collaboration.

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# VIDEO, MULTIMEDIA AND CONSTRUCTIVISM CREATING NEW VALUE FOR TRAINING VIETNAMESE SCHOOL TEACHERS

*Jack Koumi, Educational Media Production Training, United Kingdom*

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## Introduction

In 2005, Primary School teachers in Vietnam started a three-year in-service course that aims to convert their didactic/instructivist approach to an active-learner-centred methodology. The distance learning course distributes DVDs of 14 video recordings of classroom teaching, exemplifying the new methodologies. Each video is viewed in short segments by small groups of teachers, who carry out discussion activities specified by a printed Study Guide, and then teach a class using the methodology.

This paper describes a proposed online adaptation of the course: multimedia versions of the Study Guides would accompany streamed video extracts, followed by asynchronous discussion, moderated by tutors. The adaptation enhances the existing course's instructional design and augments its constructivist learning opportunities, as follows.

## New value through multimedia

- The single multimedia screen integrates video and text material, so eliminates the distraction of switching between media.
- On-screen text phrases gain meaning through an audio track – and these key phrases guide learners to focus on specific features of the video (the video screen being positioned next to the text).
- Parts of the Units will be replaced by *synchronised audiovision* sequences on the web (audio, synchronized with a sequence of images).

## New value through online presentation

- Online discussions would be more inclusive, giving equal voice to those teachers who are reticent face-to-face.
- The asynchronicity allows time for deeper reflection and hence higher level cognition.
- Currently it is not feasible for the tutors to travel frequently to outlying provincial schools.

## New discussion forums afford constructivist learning opportunities

- Prior Knowledge forum (concept maps of what they know)
- Metacognition Journal and Forum
- Free-ranging discussions on topics chosen by the learners

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# A CASE STUDY OF AN INTERNATIONAL E-LEARNING SECTION

*Rory McGreal, Athabasca University, Canada*

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## Introduction

The Commonwealth of Learning (COL) is an intergovernmental organisation created by the Commonwealth Heads of Government to encourage the development and sharing of open learning and distance education knowledge, resources and technologies. The COL eLearning for International Organisations (eLIO) section is a section that provides technology-enhanced, customised training solutions for international organizations such as the World Bank and WHO. Services include needs analyses, development of customized culture and gender sensitive training materials; and course delivery at a distance using expert tutors. Many international organizations, aware of COL's international reputation for distance education in the developing world, are contracting with the eLIO for their training needs. This paper provides a review of this COL section using an evaluation framework.

## Methods

The review was conducted using triangulated data collected from several different pilot and programme evaluations, published papers, a simple survey instrument, and other documents as well as interviews with a random sample of participants (student, partners, tutors) from eight participating international organizations (World Health Organisation; UN High Commissioner for Refugees; International Labour Organisation; International Federation of the Red Cross and Red Crescent Societies; The Joint UN co-sponsorships for HIV/AIDS; World Bank; UNICEF, India Country Office; and the Office of Internal Oversight Services). The COL staff, and a sampling of others were also interviewed.

## Activities implemented

The eLIO team developed and delivered technology mediated distance learning programmes with international organizations in different regions around the world. They formed partnerships with international organizations in order to accomplish this. The learning materials were developed and customized for each organization to promote the learning of relevant occupational skills, based on an analysis of the learners' needs and the capacity of the technological infrastructure available. Qualified tutors were engaged and trained in order to facilitate the delivery of the programmes. Seven international partners participated as partners in eLIO programmes.

## Discussion

From the establishment of the COL eLIO a debate has surrounded its role in promoting the organization, with quality materials, developing partnerships, support for ODL, and fund raising. An important development in the debate has been the evolving understanding of the section's role in supporting COL's overall policy direction, and hence, the section's alignment with the organizations goals. For example the eLIO's efforts in delivering training to UN agencies resulted in offered opportunities for other COL sections from UNICEF and possibly from an African government. These opportunities can relate directly to one of COL's core goals of capacity building in the Commonwealth.

## Conclusion

The eLIO achieved their intended results, yielding significant benefits in their principal outcomes and outputs, developing a model for potential application in a variety of different (but possible) organizational and educational settings or environments with some important additions to the stock of open learning pedagogical knowledge. Perhaps the most difficult analytic problem is assigning to the section a proportion of the overall benefit of the programmes in a manner that properly reflects the section's contribution to it. For example, how much of the partner's and learners' input was responsible for the overall success? There is no reliable way to accurately quantify the section's contribution in most cases, and doing so remains a methodological challenge for the future. For the purposes of this study, the researcher has attempted to specify in his analyses the role that the eLIO section has played. Based on this assessment a conservative judgment was used to characterize the section's contribution for purposes of developing findings and recommendations. What cannot be dismissed in any analysis of the work of this section is the fact that all the stated goals were met and in some cases exceeded, coupled with a rather overwhelming degree of satisfaction expressed by all the participants, including the learners, the partners, the tutors, the COL staff and the eLIO section employees.

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## THE INTRODUCTION OF CONTINUING PROFESSIONAL EDUCATION ONLINE IN A REGION OF RUSSIA

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This paper focuses on a new and innovative use of e-learning by the Kaliningrad Regional Government of Russia. It describes the introduction of demand-led e-learning to support more and better continuing professional education (CPE) for civil and municipal servants.

Russian higher education is still dominated by a top-down, centrally planned approach. The focus in most European countries in recent years has been on a student-centred approach to learning. However in recent years Russia has adopted laws and decrees to create the framework for a demand-led approach. Despite the reforms, much training remains unrelated to labour market needs.

A number of Russian higher education institutions have made very significant progress in the use of e-learning. Some CPE distance education courses for civil and municipal servants are already available. But at the regional level limited numbers of staff are engaged in these activities, institutional e-learning strategies are rare, and materials are mainly e-text with little interactivity.

To meet the learning needs of civil and municipal servants in the relatively small region of Kaliningrad, and possibly act as an exemplar for other regions of Russia, an approach is being introduced which is:

- Resource-based using interactive self-study materials available online.
- Designed to allow CPE to take place at a time and place to suit the busy civil and municipal servant.
- Relevant to operational needs, being very practical with a theoretical underpinning.
- Able to meet strict quality criteria, in particular providing a measurable improvement in work performance.

During the course of our work staffing limitations in institutions became apparent, in particular in relation to the new concept of a market-orientated approach with the linked requirement for new teaching and learning methods.

However the commitment to more and better CPE through the use of flexible delivery approaches is very encouraging and bodes well for the future.

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<sup>1</sup> Both authors are currently working as consultants in a project in Kaliningrad Region, Russian Federation, funded by the European Commission (EuropeAid/123561/C/SER/RU) "Administrative Capacity Building for the Kaliningrad Region, Russian Federation" (see [www.adcap.ru](http://www.adcap.ru) for more information). The views expressed in this paper are entirely the personal opinions of the authors and can in no way be taken to reflect the views of the European Commission.

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## E-LEARNING PROCESSES IN HIGHER EDUCATION IN LITHUANIA

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ICT, and related policies, play a key role in achieving the goals of the Lisbon strategy. In 2005, the new strategic framework for Information Society policy – i2010 – identified three policy priorities: the completion of a single European information space; strengthening innovation and investment in ICT research; and achieving an inclusive European Information Society. Lithuanian Education and training systems play an important role in reaching these goals.

The role of ICT in education is becoming more and more important and this importance will continue to grow and develop in the 21st century. Lithuanian institutions of higher education have a very different experience in e-learning. In the frames of the strategy we have a programme “Lithuanian virtual university 2007-2012” (LVU). The main aim of the programme LVU is to expand information infrastructure of Lithuanian science and studies, applying available resources. In 2008 the programme “Lithuanian Virtual University 2007-2012” financed a research for exploring e-learning situation in public and private higher education institutions in Lithuania and opening of e-learning delivery features in private sector and to make recommendations for the institutions how to transfer their services to the virtual space.

Main tasks of research: to prepare research methodology for specific sector; to compare features of e-learning, human and technical resources in private and public education sectors; to make issues to private sector how to integrate their services to the virtual space.

There were made issues that there is great demand for training, qualification improvement and re-qualification courses by distance learning in Lithuania. It is very important to train teachers and trainers, DE administrators and moderators, as well as supervisors on continuing basis in the use of information and communication technologies which change rapidly. Teachers and trainers should be introduced with the latest tools and the ways to apply them most effectively in the learning process. There are a lot of technologies for e-learning courses creation and delivery used in different institutions in Lithuania.

There are two major forms that are most popular in distance education delivery in Lithuania:

1. completely online learning or blended learning designed using virtual learning environments (Blackboard Vista CE6, Learning Space, First Class, Moodle and others) and
2. video conferencing.

Video conferencing network is the basis for video conferencing support system in all over Lithuania. Respondents from private sector usually don't use such e-learning technologies like Video conferences support systems, content development systems, virtual learning environments and etc.

Having completed tasks for the implementation of Lithuanian e-learning infrastructure development, a flexible distance learning system will be created that would include service supplier and user support parts, would provide Lithuanian lecturers and teachers, scientists and researchers, students and pupils as well as the entire society possibilities to use e-learning services and make a contribution into the implementation of life long learning principle, decreasing the difference between the town and the country. In such way, e-learning technologies would become more dynamic and would stimulate the development of distance education and virtual university in Lithuania. Using information technologies of learning processes fundamentally changes the approach to organizing learning processes; i.e. teaching gets ever more oriented at the student. Thereby, the shift from systemic to individual teaching is in progress.

Infrastructure and resources (tools and courses) accumulated in the Higher Education sector have great potential to be exploited in the other sectors too (Adult Education, Vocational training, In-service training etc.).

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## EuNeOn

# THE EUROPEAN NETWORK OF NETWORKS FOR HIGHER EDUCATION ONLINE

*Paul Ruehl, Georg Seppmann, EuNeOn / Bavarian Virtual University, Germany*

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EuNeOn is a newly established network of university networks which organise and support cross-university online teaching and learning in their respective countries. By sharing their experience the networks of EuNeOn will enhance their future development and support other emerging networks. They will stimulate virtual student mobility, and they will contribute to the discussions inside the e-learning community by focussing on the economic and organisational aspects of e-learning. EDEN members are invited to take part in the work of EuNeOn.

In several European countries university networks for higher education online have been established. It is their aim to make the best use of expertise, shared knowledge and sensible division of labour, thus combining the economic advantages of online education with its pedagogical and social benefits. In October 2009 five of these networks founded EuNeOn, the European Network of Networks for Higher Education Online. Through cooperation, by making available their experience to other networks and by supporting emerging networks these networks will contribute to the development of the European knowledge society.

“Knowledge society” and “knowledge-based economy” are key concepts of the Lisbon strategy set out by the European council in March 2000 with the aim of making the European Union “the most dynamic and competitive knowledge-based economy in the world capable of sustainable economic growth with more and better jobs and greater social cohesion, and respect for the environment”<sup>1</sup> by 2010.

If we want Europe to become the world’s most competitive region, we must pay due attention to questions of economy and efficiency in all relevant spheres, including education. This does not imply the subordination of university education to the needs of “Business”. But we must not ignore the simple fact that with limited resources there will always be the task of making the most of the financial resources at our disposal. It would be a serious mistake to reject questions of efficiency and economy in the field of university education as “unacademic”.

The networks cooperating in EuNeOn are no independent distance universities. Generally, our networks do not offer complete degrees nor do they employ teaching staff of their own. On the other hand, they provide more than just online elements as an add-on to face-to-face courses. To understand this approach of the networks of EuNeOn, we have to understand their concept of “blended learning”.

After the collapse of the initial e-learning euphoria, “blended learning” became the common concept for the integration of computer- and web-aided elements into teaching and learning. By “blended learning”, many experts mean the combination of face-to-face teaching and web-based teaching within a single course. We call this type of blended learning “micro-level blended learning”.

While micro-level blended learning has many pedagogical benefits, it does not necessarily make full use of the economic effects of e-learning. The teachers who use single e-learning elements in their courses do not necessarily gain additional teaching-time, and micro-level blended learning is hardly a remedy e.g. against the shortage of lecture rooms many universities face. For the students, this type of blended learning offers only very limited flexibility – and flexibility is a key success factor. In many cases, especially when the online elements are exploited only by one professor at one university, micro-level blended learning seems to offer higher quality or added value at additional costs.

By contrast, the networks cooperating in EuNeOn concentrate on macro-level blended learning with the purpose to offer high-quality teaching in a cost-effective way. By macro-level blended learning we mean the integration of single online or e-learning courses into courses of study or curricula which otherwise (and for the most part) consist of “traditional” face-to-face courses. Thus, students can earn some credits in online-courses, but not the complete degree. This combination of face-to-face courses with courses that are delivered completely online (possibly with the final examination being held face-to-face) gives the students much more flexibility than micro-level blended learning. At the same time the students enjoy all the benefits of a traditional face-to-face university. Therefore, macro-level blended learning minimises the dangers of social isolation sometimes associated with e-learning.

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<sup>1</sup> [http://ec.europa.eu/growthandjobs/pdf/kok\\_report\\_en.pdf](http://ec.europa.eu/growthandjobs/pdf/kok_report_en.pdf)

Moreover, if online courses are developed once at one university, and then exploited at several universities, the comparative cost-effectiveness is obvious. Universities can “import” courses from other universities, including even the support of their students by tutors of the “exporting” university. By contrast to micro-level blended learning, this kind of import also helps universities to compensate a possible lack of teachers as well as room shortages.

Macro-level blended learning combines the social and pedagogical benefits of face-to-face teaching and learning with the economic and didactic possibilities of e-learning. It is therefore one of the responses to the challenge of having to provide more and better education in times of strained public budgets. Some European countries even expect a major growth in the number of students over the next years. Macro level blended learning is especially valuable for these countries.

EuNeOn is the network of networks organising macro-level blended learning. By sharing their experience and by exploring ways to more intensive cooperation, the networks united in EuNeOn will make a significant contribution to the development of online teaching and learning in European higher education, including the shared use of online material. By focussing on the economic aspects of high-quality e-teaching without neglecting its pedagogical and social benefits, EuNeOn will contribute to the enhancement of European competitiveness in the fields of education and the development of the European knowledge society.

At the same time, EuNeOn will enhance cooperation between the organisations and initiatives within the European e-teaching community by paying special attention to the aspects of management and economy.

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## DISTANCE EDUCATION HUB (DEHub)

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### Introduction

The University of New England (UNE) is one of the oldest distance education providers in Australia, and has a strong international reputation in this area. UNE has the capacity to respond to the Australian federal government's goal of addressing labour shortages and connecting communities to enhance social inclusion and sustainability of rural and regional settings. UNE already demonstrates how regional communities can be engaged in learning in a virtual, synchronous and asynchronous world through its courses and regional access centres. Distance Education Hub meets the requirement for Australian universities to identify a distinctive strategy that will consolidate sector expertise in the use of technologies and enhance and build upon UNE's reputation for leadership in distance education. As a bold new initiative DEHub aims to provide leadership in undertaking research, developing and implementing models for distance education across the Australian tertiary sector. DEHub intends to engage in national and global collaborations on evidence-based approaches to new teaching technologies.

### Snapshot of phase of DEHub

Phase 1: Three themes: DE Learning, DE Community and DE Research and Evaluation. A project manager will provide quality governance. This position will be complemented by academic staff, who will jointly steer the project in association with our key stakeholders, by establishing vision, mission and fully-conceived, achievable and agreed project plans. The team will require administrative and Web programming support for development of a comprehensive website with information, resources and interactive virtual spaces. A reference group will be established. The reference group will steer the development and integration of the evaluation plan. The first task of the academic positions on the team will be to conduct a preparatory scoping of the three themes of DE Learning, DE Community and DE Research and Evaluation. The three themes will be refined through the expertise of stakeholders JISC, SURF, Learning Federation, Education.au and Australian Flexible Learning Framework, AARNet and e-Framework for Research and Education. DEHub will seek to achieve a Memorandum of Understanding with all stakeholders. Two PhD fellows will start immediate work on the "Attrition in Distance Education Research project". And "The student voice research project". This will inform the recommendations for national indicators for attrition of distance education students across Australia.

Phase 2: Inter-university, national and international experts (~20) will then be invited to attend a colloquium in order to workshop the three themes, consolidate the preparatory scoping and finalise the DEHub agenda. They will be invited to present a position paper. A key focus is the impact and outcomes for different target population groups, such as people living in rural communities, when engaging in distance education. The colloquium will also allow for the development of a sustainability model of DEHub. An International Conference will back-onto the colloquium so as to disseminate widely and act as a clearinghouse for the outcomes of the colloquium (and conference) but also to capture the number of luminaries for a wider audience and which will result in a high profile event. UNE is also the Secretariat of the Open and Distance Learning Association of Australia (ODLAA) so is well positioned to undertake this conference and future biannual events. Other activities in this phase include inter-university collaborations, sharing of expertise and collation of evidenced-based use of technologies as key aspects of the pre/post-colloquium/conference phase. Consultation with the reference group and evaluation will be on-going.

Phase 3 is characterized by the consolidation of DEHub and implementation of the sustainability plans. The three substantive projects identified during the colloquium will be completed. Uptake of the recommendations from DEHub will be distributed to higher education institutions through RSS feeds, a subscribed mailing list, an e-newsletter and local, regional and national media outlets in Australia and internationally across four continents.

### Conclusion

The significance of this bold project is had on numerous levels, not least that DEHub provides leadership by establishing itself as a clearinghouse for knowledge generation and transfer and pre-empting the requirement to understand and support the use of learning technology across the higher education sector as one response to the Australian Governments digital revolution.

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## IMPLEMENTING A COST EFFECTIVENESS ANALYZER FOR WEB-SUPPORTED ACADEMIC INSTRUCTION: A CAMPUS WIDE ANALYSIS

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More and more universities and educational institutions are considering the integration of new information technologies in their instruction. However, not many of them are fully aware of the complexity of this process, nor do they recognize what their decision making really involves. The relevant considerations are twofold: the long-term policy level and the level of the online learning systems operator, i.e. the instructor. This mission is even more difficult and confusing considering the wide variety of distance and online learning models and strategies implemented in diverse settings, from Web-supported academic instruction, through blended learning, up to a fully on-line model.

In light of these issues, a comprehensive model was developed, validated and implemented at Tel Aviv University. The model consists of a cost effectiveness framework that defines cost and benefit components of Web-supported academic instruction, and a computational analyzer that provides a translation of the components into quantitative values. This paper first describes the cost effectiveness model and its computational analyzer. Subsequently, presents its implementation at the Tel Aviv University campus. Cost and benefit of 3,453 courses provided by Tel Aviv University were analyzed, exemplifying campus-wide analysis with the model. These courses represent large-scale Web-supported academic instruction processes throughout the campus. The findings were described, referring to students, instructors and university from both the economical and educational perspectives.

The cost effectiveness analyzer was automatically implemented in each one of the 3,453 courses. The computational mechanism processed the data and produced the courses' output files regarding cost and benefit for a period of a year in relation to students, instructors and university. The cost effectiveness values resulting from the calculations were summarized in four "coins" (efficiency coins=\$; quality coins; affective coins; and knowledge management coins) for each of the three actors (students, instructors and university). In order to examine the distribution of those values throughout the campus assessment scales were created on the basis of descriptive statistics.

All three actors involved in online instruction gain enormous benefits in terms of the four "coins" (efficiency, quality, affective aspects and knowledge management) – far beyond the cost invested. About 78% of the total direct cost went into instructors' development and implementation of online instruction, including the time invested in interaction with students and in assessment. The university invested about 18% of the costs in the technological and operational infrastructure, and about 4% was spent by the students, mostly for printing the electronic learning materials. About 95% of the total saving was on behalf of the students as a result of electronic content consumption efficiency, receiving/delivering announcements, performing exercises on-line, posting papers and assignments, and saving copying/printing costs. The fact that the instructors and students received a very high value of "Quality coins", suggested improved instruction as a result of interpersonal communication, various content knowledge representations, and in particular for self-exercise accompanied by immediate feedback, production of student activity reports, which made it possible to supervise students' learning. Students received a very high value of "Affective coins", reflecting satisfaction as a result of simplicity of use; interactivity; immediate feedback; flexible learning; interaction between lecturer and students. The instructors were satisfied with how the website worked, with the convenience of flexible instruction, and with the increased interaction with their students. The university scored a very high affective benefit for the prestige gain. The students and the university got Knowledge Management benefits. But the great winners were the instructors, who received very high values for effective knowledge organization (e.g. greater collaboration and sharing among instructors, and reusing materials over the years).

From the campus-wide analysis we can draw two main preliminary and apparently contrasting conclusions. The first is related to the impressive benefits achieved at Tel Aviv University as a result of integrating the internet in the academic instruction. And this has been done at relatively little cost. The main investors are the instructors while the large number of students using the learning management system reaps the greatest benefits at the lowest cost. The second conclusion relates to the fact that the web's potential for increasing efficiency, improving quality and effective knowledge management was only exploited up to a point, at the campus. The variance among the courses was found to be very high. Moreover the fact that in most of the courses benefits were rather low indicates that a relatively small number of courses gain large benefits from integrating the internet. Nevertheless many of the instructors and students were satisfied with web usage in their teaching learning processes.

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## FROM TEACHING TO TESTING – A BUSINESS MODEL FOR OER

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Informal and non-formal learning is increasing and leads to new challenges for educational institutions. Until now, formal ways of acquiring competences are the dominant standard – particularly because they are combined with acknowledged certificates at the end of a learning path. However recent political measures intend a framework which permits accrediting competences independent of how and where they were acquired.

One challenging development in this context is the rise of Open Educational Resources (OER). But OER miss one basic function of the educational system: the provision of diplomas and degrees. This is a fundamental societal function, because such accredited certificates are clearly signalling specific competences and thus provide access to certain career paths. We thus assume a possible institutional innovation which reflects this background and provides the possibility to transfer non-formally acquired knowledge into formal structures. We name this development 'exams to go'. In lifelong-learning-processes we see a shift from teacher- to learner-centred educational processes (self-regulation). This shift is mirrored here in the shift from teaching to testing. It is a model that we assume to be a real innovation particularly in distance education which is still primarily based on the provision of course materials.

We even expect that 'exams to go' will become a 'business model'. The accreditation of non-formally acquired competences is a service which generates value for the learner referring to the labour market and to the access to further/higher education. In addition we consider it possible that the willingness to pay for degrees might even help to solve the problem of didactical transparency of OER. Thus it could be worthwhile to think of a more customer-driven approach to the use of OER which are at the moment purely producer-driven. Customers could be interested in a quality evaluation of resources they use and in the acknowledgement of what they learnt. Until now there is no accreditation of the quality of the acquired competences.

There is thus also no established system to publicly and systematically review OER in order to generate more transparency in the world wide thicket of learning objects. All together it is difficult for a user of OER to find adequate OER and to estimate their quality and usefulness.

Thus, we assume two features to cover the quality and the accreditation lack. First the 'didactical context specific quality assessment' of the resource would make the learner's deployment of means for learning more efficient. But it cannot be done in general; so many interesting resources are left out. The second additional feature could be: certified learning with OER. One's learning will be documented. If a learner wants to foster his career with his learning efforts, he might be willing to pay for accredited proof of his acquired competences. Educational institutions or general accreditation agencies could thus specify the conditions for certain degrees etc. and open their examination procedures to self-learners. They could offer 'exams to go'.

The degree providing institution could charge fees for different services or just for admittance to the exams. There could be different kinds of additional services around (commercialized) degrees, e.g.:

- *Pre-test* (estimating the possibility of a successful examination process) and/or *learning contract* (referring to knowledge and skills which have still to be acquired and to resources for this acquisition).
- *OER-quality assessment* (providing an assessment tool).
- *Improvement of OER* (e.g. feedback to the author of a resource. Authors could gain reputation.)
- Study centres (subcontracting local centres to conduct and survey written and/or (online) oral exams).

From a European point of view (Bruges-Copenhagen process) it should be insignificant where something has been learnt. Irrespective of whether the competence is a consequence of reflective processes whilst carrying out the work or was gained within the course of institutionalised educational activities or with the use of an OER, the estimation remains identical. To make all these learning results comparable to each other an underlying competence model is required which allows differentiation according to general and domain-specific analysis and according to different levels of proficiency. Such competence models allow defining tasks and tests for acknowledgeable certificates.

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## WEB 2.0 TECHNOLOGIES TO STREAMLINE THE PUBLIC ADMINISTRATION AND TO SUPPORT THE REFORMATION PROCESS: AN ADVANCED NEW PUBLIC MANAGEMENT?

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### **What is the Scuola Superiore della Pubblica Amministrazione Locale?**

The SSPAL (Scuola Superiore della Pubblica Amministrazione Locale) is a public school in charge with training and educational service for the whole system of local Autonomies in Italy (Municipalities, Provinces, City Managers, Administrators and City and Province Secretaries).

### **The Reformation Process and the Web Based Training**

Italy is nowadays involved in an important reformation process which aims to streamline the administration, make effective the constitutional reform and manage at the best this power transfer toward the local authorities. This process will be supported by a parallel transformation of the education sector and the web 2.0 new technologies will help in a definite way.

### **SSPAL Virtual Campus and SSPAL.doc**

The SSPAL longlife learning and web 2.0 based educational system provides public local managers, administrators and employees with a continuous educational and training environment, in order to give them much more support in the concrete implementation of the reform process. Its main tools are a Virtual Campus and an open archive called SSPAL.doc

The Virtual Campus is an LMS platform (scorm 1.2) which contains all the learning objects produced by the School during its institutional activity. The platform is formed by one generic LMS environment and from six specific LMS environments which can be activated at the same time. All is kept together by a Social Network analysis tool that can be used for monitoring the processes, and by a single sign-on access.

SSPAL.doc is a tool which manages the documentation the SSPAL has gathered and produced in more than ten years of activity. A research engine allows the users to navigate and to look for specific part on a specific topic among more than 20,000 documents. SSPAL.doc is the biggest documentation project online in the whole local administration in Italy.

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## IMPROVING KNOWLEDGE BUILDING SUPPORT: DESIGN AND ASSESSMENT OF A DISCUSSION TOOL

*Iolanda Garcia, Begoña Gros, Universitat Oberta de Catalunya, Spain*

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In this poster we present the design and assessment process of a discussion tool meant to support collaborative learning and knowledge building processes. The eKnowledge tool is based on social knowledge building theory and incorporates several functionalities specifically conceived to favour the development of such kind of processes in the context of an e-learning environment as the Universitat Oberta de Catalunya (UOC).

### Context of development and goals of the project

The field of CSCL has grown up in the last years and has generated interesting results about the nature and essential issues in collaborative learning processes and environments. However, the implementation of collaborative systems and processes in specific settings remains not adequately tackled. We present our current work on the development, assessment and implementation process of a discussion tool designed to favour the development of collaborative learning and social knowledge building processes, as well as the production of quality conceptual artefacts. This tool is being developed on the base of CSCL products but it also takes into account early advancements made on discussion tools in the social web scene.

### eKnowledge design

For the design of eKnowledge we have worked on two dimensions that are complementary and provide feedback to each other. The first dimension is concerned with forum usability, such as structure and navigation issues with a clear impact on information management. The second dimension is more methodological and process oriented, thus it is focussed on functionalities specifically designed to support collaborative knowledge building processes

### eKnowledge assessment and results

The evaluation of the product consisted on a pilot test by groups of experts in the use of electronic forums. Both the specific functionalities incorporated and the general usability of the system have been implemented and assessed in two different contexts:

- The forum space from the eMagister.com site (Intercom Group). A group of customary users of general forums have participated on the tool assessment from the perspective of its usability, thus focussing on information management functionalities and navigation structure.
- A small group of teachers (10) with expertise on the application of collaborative learning methodologies and supporting technological tools has assessed more specifically learning scaffolding and discourse structuring functionalities.

General questions guiding the assessment process have been:

- Does eKnowledge facilitate information management throughout generated discussion spaces? In which way?
- Does eKnowledge support collaborative learning and knowledge building processes?

In general terms the results have shown that specific functionalities to support collaborative learning and knowledge building processes are very well appraised (criteria 1 and 2), but that usability and navigation options require further analysis and improvement (criteria 3 and 4). It is of main relevance to build a simple tool that allows transparent and intuitive usage by both teachers and students in different educational settings. In this sense, it is important to guarantee that new functionalities do not hinder an easy and effortless use, or at least that extra difficulty is not due to usability reasons but to methodological ones.

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# THE USE OF A PEER-ASSESSMENT AND A REFLECTION REPORT TO MEASURE COLLABORATING LEARNING EFFORTS – AN INTERDISCIPLINARY PROJECT FOR STUDENTS OF THE FACULTY OF TEACHER TRAINING, THE FACULTY OF SOCIAL WORK AND WELFARE STUDIES, AND THE FACULTY OF HEALTH CARE

*Kristof Uvijn, University College Ghent, Belgium*

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## Introduction

Since 2005, students of the Faculty of Teacher Training, the Faculty of Social Work and Welfare Studies, and the Faculty of Health Care, work together in interdisciplinary teams. Each team consists of approximately ten members and one coach. Over a period of three months there are five meetings. In between two meetings, the students can use the electronic learning platform (ELP) provided by the University College Ghent or keep in touch via mail. Each team has its own forum. We insist that the students and the coach keep seeing each other in vivo during the meetings, because we also want the students to train their communication skills. This way of working is also a better copy of how an interdisciplinary team works in real life. During their teamwork they have to set interdisciplinary goals and fill in a strategy/plan for the case they are working on. The cases in this interdisciplinary project all handle about people (can be children, adults or elderly) with impairments or disabilities (can be physical or cognitive). Each team, and each member of that team, goes through a process. Therefore it is not only important to evaluate the product at the end of the cooperation, but also the evolution of the team and each of its members.

## A system in two layers

We have evolved to a system in two layers. On the one hand there is a product evaluation, on the other hand a process evaluation. For the product evaluation we use a 'standard' evaluation form. The process evaluation contains a peer-assessment and the evaluation of a reflection report. On a total of hundred points, seventy points are reserved for the product evaluation, and thirty for the process evaluation. This result gets multiplied with the peer-assessment factor (after correction).

Peer assessment – For the peer assessment we use the PASI (Peer-Assessment Scoring Instrument), developed by Prof. F. Dochy and L. Beijer. Each student has to score each member of the group for each criterion (range from +3 to -1). In our project there are nine criteria: is involved, is well prepared and does his or her own tasks efficient, brings in new ideas and information, has an own opinion and formulates (communicate) this opinion adequate, task behaviour, individual behaviour, communicates about the disciplinary goals and interventions, formulates clear the disciplinary goals and interventions, communicates/thinks about the interdisciplinary goals and the proposed methodology.

Reflection report – According to Kolb, everyone has his own learning style. This style fits you best and you use this style the most. The Kolb Learning Style Inventory (LSI) describes the way we learn and how we deal with situations. We use a ready to use test (one of the many that you can find on the Internet) based on the LSI of Kolb. We let the students do the test to let them know and think about their own learning style and to confront them with other styles. The increasing awareness of their own learning style(s) and the representation of different styles in their team, gives them the opportunity to steer their own style and to steer the group in the right direction. The students write a reflection report about their findings, and the way they have used these ideas in the following sessions.

## Conclusions

We use the peer assessment and the reflection report both as an evaluation format and as a method to steer the process and to motivate the students to do better, or to do something new, to extend their borders. The tools we use are ready to use and easy to find. It just takes time to build a good practice and a good way to integrate these methods in your own practice.

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## THE E-CODE APPLICATION

*Alfonso Santaniello, Brunella Maio, CONFORM – Consorzio Formazione Manageriale, Italy*

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### Background

The competence based methodological model and the web application in question were developed in the EUTRANEX – European Training Networks of Excellences, Leonardo da Vinci Programme – Transnational Networks project, code I-04-B-F-NT-154094 and within the E-CODE “E-learning for Competence Development” project, code LLP-LDV-TOI-2007-IT-383 will be adapted and transferred to the credit and Employment Services Sectors. The “E-CODE” application allows one to define competences, analyse needs, design and deliver self directed learning interventions with access to virtual environments, inspired by a job aid logic, that assume the constant reference to management by process and by competence as a paradigm of quality of e-learning. This application allows one to:

- create “competence dictionaries of vocational profiles”, by denominating, describing and breaking them down into knowledge, operative ability and organisational behaviour and, thus, allows you to guarantee basic and specialist competences that each vocational profile needs to undertake his/her working activities at required performance levels;
- design “training programmes tailored to fill the gaps” identified in potential on line training beneficiaries between the competences expected and those that they effectively have and use to deliver via e-learning.

### Why use the application?

The “competence based” model, assuming the “process-competence binomial” as a reference point, constitutes a powerful tool to integrate and organise activities. Following the fil rouge of processes, thus, allows one to identify the logical-temporal succession of activities and work results. The E-CODE application based on this methodological structure and by integrating technological, cognitive, pedagogic and organisational aspects to create interactive e-learning systems is able to lead to:

- distributed teaching methods;
- experience based learning;
- collaborative learning;
- personalised learning correlated with elements of operative and behavioural competence, in order to help give people the competences required to efficaciously govern work processes.

The application has been structured as a place of work and lifelong learning, that allows users to access, in a “Job Aid” logic, a series of methodological references, operative supports, examples and tools to analyse needs, design and deliver training intervention by clicking on the functional tabs of the software. In particular, the application allows one:

- to implement what it contains in relation to the “Tutorial”, “Instructions for Completion” and “Methodological References” functional tabs in the different partnership national languages.

“Tutorial” refers to the Job Aid section dedicated to providing the user with access to the tutorials prepared for each of the three tools so that they can be consulted on line and offline, once downloaded in pdf format as a methodological and operative guide that is functional to the correct use of the individual sections of the application. “Instructions for Completion”, refers to the Job Aid section dedicated to providing the user with access to two distinct functions:

- the first allows the online and offline use, once downloaded in pdf format, of a document that is extracted from the tutorials prepared for each tool, that contains all the instructions on how to use the individual sections of the application;
- the second allows the online and offline use, once downloaded in pdf format, of documents extracted from the tutorials prepared for each of the three tools, strictly correlated to each of the sections of the three tools of the application.

An all encompassing tool that brings great advantage to all who use it!

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## SOLUTIONS FOR THE COMPUTER SUPPORTED COLLABORATIVE LEARNING PROBLEMS

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The educational process is conducted by teachers without experience with many of the CSCL techniques, neither blended learning capabilities, they did not have any training in delivering collaborative classes via a computer and they do not realize that sometime they have been collaborating between themselves by the use of the emails, ISLs and phone conversations between lecturers and faculties. The proposal highlights both user- and group-centred learning concepts that allow the teachers to prepare the educational content to be shared among the students and schedule/conduct the virtual classroom sessions that allow the students to actively participate to the educational process. The framework is designed using the Web 2.0 principles, so, the application is easy-to-use, the graphic components are simple but very suggestive and comprehensive and the server-side components are powerful, affordable and stable. There are four main features that characterize the Web 2.0 applications and the authors focused on these features in order to match with social software application problems: *Decentralization* – as a consequence of being a real network, every node has the ability to act as emitter and receptor of information; *Openness* – using standards in communication, free licenses on content, promotes collaboration; *Dynamic* – applications are developed and deployed quickly. User suggestions are attended and supported; *User orientation* – easier and better user interfaces facilitates participation.

### Responsibilities of Learning

The traditional education system encourages competition and individual responsibility between students and discourages any interaction, whereas the collaborative learning environments redefine the relationship between students and teachers by creating a supporting environment versus a competitive one. The proposed technology supports both traditional and collaborative learning and combines those concepts in order to allow the teacher to conduct face-to-face presentations of the educational content (video communication link and annotation tools, even handwriting), being able to manage the live classes and collaboration projects (group of students). The framework also allows the student to actively participate to the course presentation, communicate to the teacher in a real-time manner and collaborate with his/her colleagues for achieving the project goals.

### Educational Content

The authors consider the lecturer's effort and design a complementary tool that allows the lecturer to dynamically handle the educational content. Two types of educational content are stored into the e-learning platform: public and private content. If the tutor considers one of his/her materials as really important for the public interests, that material will be uploaded on the server, convert to an internal format (slideshow, e.g.) and stored into the media library as a public material. If the material is private or the tutor has no rights to make it public, it will be converted to the slideshow format and then stored into the media library as private. The tutor is able to browse the media library, load it on the shared space and share it between the students during the educational session.

### Interaction and Integration

Interacting with the resources is an important feature when talking about collaborative learning in foreign language. Here, the learners need vocabulary, dictionary or text-to-speech capabilities. The framework allows the student to access five languages dictionary (English, French, Italian, Portuguese and German) and the TTS component is integrated with the vocabulary and dictionary components. That way, learners can easily translate words from a language to another one and then render the correct pronunciation in the speakers. There are advanced educational sessions when integrating advanced teaching technologies is essential. Interactive whiteboards, tablet PCs, digital tablet pens, or video projectors are integrated within a stable and powerful educational environment that supports blended learning services. An intelligent module allows the end-users to involve particular equipments in the educational process, too. An online tutorial among physicians using echographs or other medical equipments having S-Video output is a suggestive example.

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## BLENDING LEARNING APPROACH FOR ARCHITECTURE AND ARTS

*Pedro Neto, Andrea Vieira, Lúcia Ribeiro, University of Porto, Portugal*

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CCRE is an open project that aims to hold the interest of different people and research coming from various institutions and fields of study. The work is focused on using Digital Media Technologies on the web for collaborative work and for communicating public spaces, as well as any proposed design for them. Its website constitutes the main medium where all these different collaborative studies take place and we have been exploring the potential of using this platform for learning in Architecture and want to extend it to Art and Design courses.

This paper is the result of a case study conducted in the Faculty of Architecture of Porto University (FAUP) of a blended learning approach integrating the Centre for Spatial Communication and Representation (CCRE) website (<http://web.ccre.arq.up.pt>) for teaching CAAD (2nd semester of the 3rd year). The paper begins with a short theoretical framework and then describes the objectives of this case study, strategy and model that were applied for teaching and the type of digital material and learning tools that were used. Finally the most significant results are discussed and a set of conclusions drawn.

The results, besides other things, highlighted that the learning process that rises from the creative use of an open collaborative platform as CCRE with a blended learning approach strengthens the teacher's capacity to work as a team and helps to open the university to its city and people. In fact, it was particularly noted that this technology worked as a real catalyst for approaching the students and teachers towards the emergent problems of their city, public spaces and proposed design. Then, it was clear that it also helped to create a new teacher/student interaction, making communication much easier and giving the students a more active role in the learning process.

It was our intention to explore the collaborative platform in order to reach the following objectives:

- Allow asynchronous communication (individually or in group) between teacher and student beyond the classes' time. For this purpose the email was used.
- Create a place in the platform where each student would write an abstract about the group's work and his collaboration. For that purpose the Forum tool was used.
- Create a place within the platform encouraging the exchange of ideas and informal assessment of group works from students. For that purpose we employed the Forum tool, especially the one linked to each project. This allowed students to comment informally indicating which work they thought more interesting, and write what they thought to be important.
- Create an operator that could help the students and the public to navigate through the CCRE website. This was done by using Ajuda.

The teaching context reflects an attitude in which process is as important as outcome. It promotes a heuristic design process based in approximation to solution, following a non standard path based on intuition, participation, permanent interrogation and intelligent processing featuring knowledge birth. Rather than a tool, integrated in networks, a CAAD course can be a creative environment pointing to collaborative design, promoting multi and inter-disciplinarily, stimulating the raise and exchange of ideas, increasing the autonomy and responsibility of the student in the learning process, setting CAAD as a heuristic learning approach itself. This means a heuristic learning approach that supports a heuristic design research.

It was important, besides other things, to know if the CCRE platform had, in fact, influenced positively the students learning process and if they had a positive opinion about its use in classes.

We also draw attention to the results obtained from the correlations between certain variables of student's responses to pedagogical inquiry, and for the final marks obtained by them. These results point out, besides other things, that the integration of this collaborative platform within the learning process of the course allowed us to achieve positive results. In fact, from these correlations we can gather that using the collaborative website CCRE had a positive influence on students.

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## INNOVATIONS IN VIRTUAL MOBILITY: A PRE-VIRTUAL MOBILITY SUPPORT PHASE

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*Eva Abramuszkinová, NEWTON College, Czech Republic*

*William van Zanten, School of Management, Open University of the Netherlands, The Netherlands*

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### Introduction

Virtual mobility is an alternative in achieving the goal of an international learning experience for those who cannot participate in physical mobility programmes due to social, financial or other reasons. Therefore, there is an obvious need for virtual mobility. In 2005, the European ministers of Education expressed a desire that by 2012, 3 million European students will have taken one or more courses in another country. This will mean an awesome increase of 300,000 new mobile students each year – a tall order, so virtual mobility and Erasmus will both be contributing to the development of programmes and making the desired result of 3 million mobile students a reality.

### Pre-virtual mobility support phase

The paper presents the achievements of the project Ready for virtual mobility? (MoreVM), funded with support from the European Commission (Lifelong Learning Programme/Erasmus), which was set up to realize the virtual mobility aspect of educating the 3 million mobile students. In order to introduce students to the benefits of virtual mobility, the general objective of the MoreVM project is to facilitate virtual mobility, encourage participation and enhance the efficiency of virtual mobility in higher education. Specific objectives of the project are; preparing students for and raising awareness of the importance of virtual mobility, to provide support for colleges/universities in organizing virtual mobility, strengthen the co-operations among them and thus encourage them also to develop joint programmes.

The project introduces a pre-virtual mobility support phase which is dedicated to the testing, initiation of virtual mobility and preparation of the two target groups (students and staff at consumer colleges/universities) for virtual mobility. The paper presents a VM introductory course for VM students which will help students to develop and/or refresh online learning skills, a VM cultural survival kit for developing intercultural, communication and linguistic skills and a VM preparatory course for VM coordinators for the staff at consumer colleges/universities acting as coordinators in virtual mobility.

The two courses have been successfully implemented and the evaluation results show that they provided the participants with the necessary information and skills in order to successfully function in a virtual mobility course. Some coordinators also participated in the VM introductory course for students and by doing so, demonstrated their recently gained skills and competencies regarding their new role. The participation by the coordinators will also contribute to the improvement of the project outcomes such as the VM coordinators profile and the VM supervision scheme. Additionally, the coordinators have expressed their interest to include their students in MoreVM's further actions and offerings.

The VM cultural survival kit, which was used as a course resource by students and coordinators, will also help virtual mobility/Erasmus coordinators in advising students on countries they have chosen for their virtual or physical (Erasmus) trip abroad.

### Conclusion

The existing practice, growing interests, good practices, developments and research in the field have shown that virtual mobility has great potential although it is not yet widely spread. The MoreVM project has made an important contribution to the awareness of the potentials of virtual mobility and offers support for those who would like to participate in it. In the next period we will put our efforts into the development of the VM community supported by the project portal ([www.morevm.org](http://www.morevm.org)) by showing our presence in blogs and forums and further encouraging dialogue with our target groups and other stakeholders.

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## ONLINE INNOVATION AND PEDAGOGICAL CHANGE: WIDENING THE CIRCLE OF EARLY ADOPTERS

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### Rationale

The study underlying this poster presentation addresses the question of pedagogical change in relation to technological innovation, and examines whether e-learning in higher education simply enhances and reinforces existing instructional practices, or whether it is accompanied by essential changes in how teachers perceive teaching and learning. Past research tracing processes of infusion of information and communication technologies (ICTs) in instructional contexts suggests that most online courses have simply transferred the lecture model of face-to-face pedagogy to the online setting. In this simple “translation” process, such courses miss the opportunity for a paradigm shift in teaching, learning, and assessment.

Issues raised by past studies investigating the complex connections between technology and pedagogy led us to re-examine the ICT infusion program at our teacher training institution, a program which began semi-formally almost ten years ago. Our research perspective was both psychological, investigating how the instructors viewed the process, and socio-historical, involving the situated context of a single institution’s diffusion and adoption of technologies.

### Methodology

In keeping with a focus on teachers’ perception of their teaching and of their students’ learning, our approach was essentially qualitative, while using a combination of qualitative and quantitative methods of data gathering. Content analysis of interview transcripts was performed alongside statistical analysis of teachers’ responses to an online questionnaire, itself developed out of the categories that emerged from the interviews. The interviews were conducted with 7 instructors who had integrated ICTs in their teaching since 2000: they had developed web sites to accompany their courses and/or initiated forums for online discussion. This group represented a purposively selected sample of innovators in adoption of technology. Questionnaires were completed by these same instructors and by an additional 25 instructors, most of whom had begun to integrate ICTs in their teaching one or two years later. Although constituting fewer than 10% of the teachers at our institution, the respondents represented almost all those instructors integrating ICTs in their courses. They could be described as the innovators and early adopters of technology at our institution.

### Results and Conclusions

Our findings show two main directions relating to the infusion of ICTs in instruction, as perceived by the teachers:

- Significant changes in the addition, adaptation, and organization of instructional materials and learning activities; increased communication between learners and instructor; an increase in the extent of independent study; increased knowledge sharing among the students, and increased learner collaboration
- Only modest changes to course syllabi, assessment practices, and to the quality of instructional dialogue; little carry-over or transfer of changes in pedagogy from the new ICT-based courses to existing non-ICT-based courses taught by the same instructors

These results suggest that deep-level pedagogical changes, those that could be interpreted as reflecting a paradigm shift in pedagogy, lag behind those changes that are easier to implement – probably because they are less radical. Our work also points to the need for involving different groups of stakeholders in the endeavour of ICT integration at the institutional level. The poster presents these findings and shows how they are relevant to future in-service programs planned at our institution for widening the circle of adopters of ICTs and for deepening the understandings of the present group. As the study shows, these early adopters have gone part of the distance; however, we still have some way to go before it will be possible to talk of a real transformation of pedagogy at institutional level. The analysis presented and the propositions arising from our study are relevant to research and practice in other similar higher education contexts.

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# SEMANTIC MULTIMEDIA ANNOTATION: AN EMERGENT METHODOLOGY FOR COLLABORATION IN E-LEARNING

*Attila Paksi, Andrea Kárpáti, János Handó, Eötvös Loránd University, Hungary*

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This poster presents an educationally relevant use of semantic web technologies: online multimedia annotation services that scaffold the collaborative, community learning. Annotation – attaching critical commentary or explanatory notes - also involves adding personal opinions, remarks to a given object, such as a document, image or video. Annotation can serve several purposes: (1) information sharing, (2) information filtering, (3) labeling of content, (4) enhance searching. This activity means sharing special viewpoints and comments, mostly in environments where the whole annotation process can be profusely designed and structured to turn this exercise into a collaborative activity. In education, being aware of and understanding other people's viewpoints and opinions provides information that helps to process new knowledge elements easily and quickly.

In this poster, we provide an overview of five video annotation services available online. Multimedia refers to the type of the resource - document, webpage, audio or video on the one hand, but on the other, it means the possibility to use multimedia elements as annotation items. Existing multimedia annotation systems can be characterized by the following features used for evaluation principles in this paper:

- User interface, manageability
- Rights of the content owner and other users
- Type of the annotation process: individual or collective (social)
- Available types of annotation items
- Available services beyond annotation
- Educational usability

We evaluated five different annotation services, but one online annotation application, Viddler, seems to be most appropriate for educational use because of its mixed community and video annotation services. Groups or private users have their own space with a built-in forum and video repository. Both new videos recorded using Viddler's inbuilt filming option and previously produced and uploaded items can be commented by using tags, textual comments and web cam recorded video remarks. In this environment, three types of tags may be added to describe or relate to content elements and fellow users: Global, Timed, and User tags.

The future prospects of multimedia annotation are defined by the need for semantic tagging options. The Semantic Multimedia Annotation Tool (SMAT) under development in the framework of the KP-Lab project, – an international research and development enterprise supported by an Information Society Technologies (IST) grant of the European Union and based on the Triological Learning Theory – addresses this challenge. This tool allows the user to add structural information such as partition into clips, relevant segments, and regions of interest to existing films, thus breaking down the video into more manageable units that might correspond to specific areas, phases or other criteria. Adding semantic annotations allows the critical analysis of the video through formal concepts taken from a domain ontology that can be pre-defined to suit educational purposes, e.g. in teacher training, through the development of reflective practitioner skills.

## Acknowledgements

This paper is based on research supported by an EU funded research and development project, Knowledge Practice Laboratory Project (KP-Lab, [www.kp-lab.org](http://www.kp-lab.org), 2006-2011) of which the authors are team members. Andrea Kárpáti is participant of this project as member of the Research Group on the Development of Competences at the University of Szeged, Hungary that supports her research on ICT in education.

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## THE BLENDING OF THREE CHANNELS FOR DELIVERING A COMPREHENSIVE AND INNOVATIVE DISTANCE LEARNING COURSE

*Mikail Feituri, Federica Funghi, Consorzio For.Com. Formazione per la comunicazione, Italy*

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The idea behind mixing three learning systems is to continually support cultural mediators, deliver up-to-date information and ensure continuity between work and training. The TIPS project can be considered as an advancement of the previous Leonardo da Vinci project, TALAS. The project, combining e-learning and m-learning platforms, featured learning objects developed based on the feedback from users who experimented with the blended methodology all over Europe. Unlike TALAS, the TIPS project integrates TV-learning in order to develop a more comprehensive and innovative distance learning course.

The e-learning platform, available through the personal computer, is suitable for studying and addressing course contents in-depth, adequate for developing a highly interactive milieu and relevant for using synchronous and asynchronous social software tools. The e-learning platform has the following features:

- Generally located in a place designated for studying or working
- The user has close interaction with the device
- Promotes diverse interaction options using a mouse, keyboard, handset, video camera, microphone.

The m-learning platform has been created to fully exploit the potentiality of mobile devices and at the same time recognize its limitations, such as a reduced screen size, and the fact that they are often used outdoors causing users to lose concentration due to background noise and other distractions. The most interesting feature of a mobile, however, is its portability, giving users the option to learn anytime, anywhere. The m-learning platform is divided into a didactic area, containing audio-video lessons suitable for didactic pills, a glossary and a phrasebook, and a communication area, providing chat and an embedded SMS utility.

The TV-learning platform, available through the television, is characterized by the following:

- An device to be used in the living room at home i.e. for relaxing and leisure
- A big screen allowing the possibility to watch high quality audio-video clips and videos
- Simple interaction through a remote control (i.e. just a few buttons and no mouse) avoids too much interactivity.

In this paper, the three platforms will be described from a technological and methodological point of view, including the back-office area of the platforms integrated into the e-learning platform administrative section.

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# ICTeacher – BACK TO THE ROOTS AND RIGHT ON TO THE FUTURE: DEVELOPING A EUROPEAN ICT TEACHER TRAINING TO IMPLEMENT INNOVATIONS IN TEACHING AND LEARNING

*Katharina Toifl, Franziska Steffen, Die Berater, Austria*

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## Technological and didactical innovations vs. reality in European schools

At the moment it seems like Europe's media pedagogical developments are dealing with two realities that are very far apart from each other. On the one hand experts in media pedagogy, educational and computational scientists are developing a wide range of innovations in the sector of media enhanced teaching and learning. On the other hand the group of users that benefits from these innovations for their own (private and informal) life long learning is quite small. It's mostly upper-class and well-educated. This is especially evident when it comes to children. If they are benefiting from computer use concerning informal education purposes very much depends on their parent's educational and social status. Computer use at school can compensate this. But the needle-eye to use the computer for educational purposes (at school) is still quite big, as studies show.

Much effort has been put on the integration of ICT in the European education systems, and most of member states have successfully increased the density of technological equipment provided in schools. But there is still a considerable gap of integration of ICT in primary and secondary school classes which is partly due to the still unsatisfying ICT level of European teachers. Several investigations and reports reflect that a lot of teachers in Europe face specific challenges and deficiencies with regard to the use of ICT in general.

## Innovations for everyone – establishing the base for life long learning

What the ICTeacher project is inventing for the future is something that ensures sustainability of inventions within this sector.

To be able to use the computer as a tool for formal and informal learning processes, to be able to use it for Bildung (as a double-reflective relation between self and world) one needs certain competences. In general the most important competences regarding the use of electronic media for learning purposes are media competence and the competence to select information.

This means that the ICTeacher programme has to cover three aspects of media use at school:

- The use of ICT in an operating manner for the quite huge group of teachers who are not used to using ICT at all.
- Delivering and transferring (innovative) didactic concepts for ICT based teaching and learning at school.
- Enable teachers to reflect on their relation to media and their media use and to be able to impart media competence.

There are quite a lot of challenges to bear in the development of this teacher training. Firstly the gap between enabling people to use ICT and to impart media competence in the end is quite a big one. Secondly the use of ICT for teaching and learning in class partly means to apply new teaching and learning methods. It means to change from a teacher-centred way of teaching to concepts like situated learning, where the teacher acts more likely as a facilitator. Thirdly there is the "clash of cultures" to be dealt with. To arrange the ICT based education in an appropriate way the difference between adult media use and children's media use has to be taken into account.

The ICTeacher-project started in November 2008 and will run until the end of 2010.

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## TESTING ENGLISH FOR SPECIFIC PURPOSES IN SCIENCE – TESPIS

*Walter Zeller, astyle, linguistic competence, Austria*

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The former Leonardo-da-Vinci project “English for Specific Purposes: Chemistry” (ESP:C), a language course for chemists, also created examinations to evaluate the students’ performance of those who completed the course. These examinations, however, do neither reliably distinguish between the language levels B2 and C, nor do they reflect the needs of linguistic skills in industry to the extent that they should.

With all these ideas and experiences as the background, the idea of “Testing English for Specific Purposes in Science” (TESPIS) came into existence. The main steps of this project can now be described as follows:

- Definitions of the language levels based on the Common European Framework must be created for the language as needed in the respective professions.
- Assessing the difficulty of a text is usually a rather subjective approach. So methods must be developed to create simple, (electronic) tools to filter authentic language material tested at the examination for quickly defining language levels.
- The framework of our TESPIS examinations is based on already existing international examinations for general English.
- Each examination will contain a reading, a listening, a writing and a speaking part.
- Guidelines for developing B2 and C1 ESP examinations will be provided for future examiners.
- The creation of a short (web-based) course for new examiners is a further feature of this project.

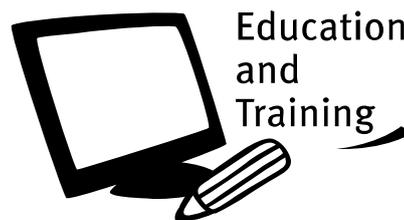
Beside the project’s website found at this address [www.tespis.eu](http://www.tespis.eu). We also have the strong support of the European distance and e-learning network (EDEN, <http://www.eden-online.org/eden.php>), European chemical thematic network association (ECTN, <http://ectn-assoc.cpe.fr/>), English for Specific Purposes: Chemistry (ESP:C, [www.esp-c.org](http://www.esp-c.org)), English for Specific Purposes: Therapy (ESP:T, <http://esp-t.eu/>), e-learning in conservation science (econs), <http://econschem.auth.gr/virtualcampus>) and Chemistry and Industry for teachers in European Schools (CITIES, <http://cities.eu.org>)

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Education and Culture DG

Lifelong Learning Programme



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## ESP AND ICT – FRIENDS OR FOES

*Iwona Misztal, Jagiellonian University in Krakow, Poland*

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### ICT as a solution for the lack of ESP course materials

As a result of increased mobility within the European labour market there is a growing demand for the developing of educational materials to teach English for Specific Purposes (ESP) in order for professionals to be able to communicate efficiently in their fields. The narrower the field, the harder it is to find courses which are tailored to address the specific job-oriented language needs of a given profession. Taking into consideration the scarcity of ESP courses in certain fields and the dispersed target groups interested in accessing such materials, the use of Information and Communications Technology (ICT) for distance learning is worth considering.

### Benefits and challenges of using Virtual Learning Environment (VLE)

ESP course developers may consider a number of different tools which they can exploit for educational purposes. They may use just one simple tool such as an internet forum, blog or wiki as a platform on which they can present their course materials and communicate with students. Additional use of communication tools such as Skype or WizIQ (a kind of interactive whiteboard accessible online) allows the creation of a virtual learning environment which seems to offer all the tools that a teacher has at their disposal in a classroom with the additional value of being accessible anywhere in the world. Another available option is integrating the ICT elements that we need for our teaching purposes and developing our own virtual learning platform.

This second solution has been chosen by the developers of an e-learning English course for therapists (ESP-T). The course is divided into 2 broad modules (General Academic and General Therapeutic) and 3 specialization modules for different fields of therapy (physiotherapy, speech therapy and occupational therapy). Additionally, a further module is developed to cater for specific language needs of visually impaired massage therapists. Based on the experience of the course developers the following stages need to be considered in order to develop an e-learning language course:

- Finding the human and financial resources to run the project. (EU funds as an option to consider)
- Choosing an e-learning platform (Moodle as a most common choice)
- Organising basic ICT training for compilers and material developers during which all technical possibilities and limitations are clearly discussed and types of educational activities which can be used are specified.
- Conducting language needs analysis to outline the content of a course.
- Collecting authentic materials (professional literature, audio and visual materials) or researching them via Internet.
- Developing pedagogical activities on the basis of the authentic materials and in line with the results of language needs analysis.
- Evaluating of the developed materials in terms of the language correctness, methodology applied, technical implementability and visual appeal.
- Implementing the validated materials on the e-learning platform.
- Testing of the e-learning platform by the target users and introducing all necessary changes.

### Foes might become friends

One thing that cannot be underestimated is the fact that although new technologies develop rapidly most of its potential cannot be exploited until course developers become familiar with the available tools. However, learning how to use ICT tools efficiently is a gradual process and devoting considerable time to improving ICT skills of material developers is an indispensable component of the course design planning. When the fear of the unknown is overcome it is also important to remember that ICT tools can never replace proper pedagogy and content development but they can enhance interactivity, attractiveness and accessibility of the developed ESP materials.

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# ON TEACHING ACADEMIC ENGLISH AS FOREIGN LANGUAGE THROUGH E-LEARNING TECHNOLOGIES AT TECHNICAL UNIVERSITY

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## Introduction

With the rapid development of computer and Internet technologies learning at any level obtains new features and characteristics. Therefore the purpose of this paper is to make a general survey of specifics of teaching Academic English at technical university considering its subject matter and regarding diversity of e-learning technologies.

## The Content of Foreign Language Learning at Technical University

According to the competence approach of training specialists at the university the students should obtain knowledge and skills in such a unity which would provide them an ability to function successfully in the professional and social environments. Therefore the purpose of teaching a foreign language at the university is to contribute to the development of the students' professional competence through cultivating sociolinguistic skills as well as communicative strategies conditioned by different professional and personal interrelations. It may be referred to as Academic foreign language which comprises spheres of scientific and professional knowledge. Competence in Academic English as a foreign language is the unity of knowledge and skills of the linguistic, cognitive and sociocultural dimensions determined by the specifics of the context and situations for which it is learned:

- The Linguistic Dimension (The Phonological Component, The Lexical Component, The Grammatical Component, The Sociolinguistic Component, The Discourse Component);
- The Cognitive Dimension (The Knowledge Component, The Higher Order Thinking Component, The Strategic Component, The Metalinguistic Awareness Component);
- The Sociocultural (Psychological) Dimension (social and cultural norms, beliefs, values, attitudes, motivations, interests, behaviours, practices, and habits which develop and shape in the larger social context where academic foreign language occurs).

## Pedagogical Requirements to E-Learning Technologies Used for Teaching Academic English at Technical University

Analysis of different e-learning technologies as applied to developing students' competence in Academic English allowed to point out a number of requirements to achieve better results in gaining necessary knowledge and skills: certain science reference, purposefulness, contextual division of the material provided, amplex referring to e-textbooks (presence of the theoretical core, checking questions to the theories, examples, problems and exercises for independent work, checking questions to the whole module with answers, test, contextual reference, linguistic/psychological commentary), visualization contextually motivated and logically grounded, adaptability of e-learning technologies to any learning situation, easy operating.

## Conclusion

To sum up it must be emphasized that effective development of students' Academic English competence enhanced by e-learning technologies can be achieved through:

- contextually motivated usage of e-learning technologies;
- orientation to the social and cultural peculiarities of the English speaking community and science studied;
- tasks targeted at professional communication and problem-solving;
- correspondence to the students' age as well as their motives and interests;
- considering the students' starting level the English language proficiency and the learning aims;
- technological and methodological ease of the e-learning technology usage;
- management of different work regimes (individual, micro-group, macro-group, self-regulated learning, learning in classroom).

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## INNOVATIVE WAYS OF USING BLOGS TO TEACH FOREIGN LANGUAGES

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Blogs are nowadays one of the most widely used tools of the Web 2.0. In fact, since the term “weblog” was first used in 1994, blogs have incredibly grown. In fact, there are more than 70,000,000 blogs available in the Internet today. Many people are interested in reading the blogs that politicians, celebrities, scientists and anonymous people write everyday. Most of the people who usually read blogs also post comments to the entries the author or other contributors wrote, becoming a part of the blog phenomenon. In addition, every day more and more people learn to create their own blog with some of the various free and user-friendly software tool, such as *Blogger*.

There is much research carried out about blogs in media, but not so much on how blogs work in education. The results of those studies are very positive. Taking these facts into account, and profiting from the social trend of using blogs, foreign language teachers have found that blogs can be powerful resources to practice foreign language reading and writing. Being aware of the potential benefits regarding students’ motivation and practice of reading comprehension, written production and written interaction, in addition to collaborative learning, and trying to find new methodologies to suit the European Higher Education Area (EHEA), with more credits, more autonomous work of the students, new roles for teachers and students, and more use of ICT, we have studied the benefits of blogs in a research project (*Redes*) carried out at the UNED with students of English for Tourism. In this paper the methodology and results are shown.

The UNED has a blended system of teaching/learning. There is a WebCT platform where the virtual course of the subject (English Language for Tourism) is hosted, printed (study guide, course book and workbook with key) and audio (audio CD) materials. It is important to integrate those materials and resources with others from the Web 2.0., as students are used to work with them, and because, although they are not meant for teaching or learning languages, they offer great possibilities for it. Skype, Wikipedia, social networks, RSS, and also blogs and chats for developing the writing skills, have been used for different assignments and projects the students had to carry out,

We have created a “Creative Writing” blog where a sentence and an image were given to start a collaborative story. The topic was related to travel and tourism, as the students were enrolled in a course of English for Tourism. During a couple of months they had to write and post a short sentence to complete the previous text, that means, the last sentence written by someone. This way, little by little, a story is finally made up. The teacher’s intervention was reduced to add the comments to the story. At the end a final version was offered with some formal corrections, more images, video links and even music.

Another blog was meant for writing about learning strategies and experiences, as a tool of reflection on how to learn English as a foreign language. Students used the blog as a learning diary.

After eight months, carrying out different types of assessment, the final results of the project have been highly positive, as the average marks of the students participating in the project have been 1.6 points higher than the rest (not participating in the project), which proves their performance has been better than the group. In addition, the number of participating students who did not take the final exams was only 13.3%, while this figure was much higher among the students who did not take part in the experience and did not take the final exams. Consequently, we can observe a remarkable reduction of drop-outs among the participants.

According to these results, blogs seem to be a powerful tool to teach and learn writing in English. There are several forms of encouraging students to participate in blogs, and all result positive in one way or the other. Regarding language performance it has been proved that if students get some feedback their written production highly improves. Nevertheless, even the activities which have not shown much utility for increasing the students’ language level, but have allowed collaborative working have been considered as “interesting” and “motivating”, thus, useful in the foreign language classroom. Some students have sent comments or corrections to other classmates without being asked to. Of course the participation with comments, etc. has been very remarkable.

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## A DISTANCE AND E-LEARNING EUROPEAN JOINT MASTER DEGREE: SIGNIFICANCE AND IMPACT

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### Master Course functioning

The course is *imparted in the modality of distance education*. All registered participants receive the necessary written didactic material: Master Didactic Guide and the corresponding Modules, all of them organized in Didactic Units. This material has been elaborated by Professors and experts in educational treatment of diversity to be used according to the mentioned modality. Every module is evaluated, at UNED University, by its University Institute of Distance Education.

Written materials are offered to students by the Master virtual platform. But apart from such written materials, students use advanced technology adapted to e-learning methodology. Some of the technological supports are the following:

- Radio and television programmes (radio programmes, videoconferences, video-classes);
- Internet intercommunication through our virtual platform. This platform facilitates communication by using:
  - Forums (General, of Academic Secretary, of Practicum, of Research, of Students' opinions);
  - Chats;
  - Working with attached video conferences and video-classes;
  - Working with inserted written materials;
- Email intercommunication among students-professors and among students themselves
- Other materials such as CDs, DVDs, etc should be progressively incorporated in the Master course.

### Master Course evaluation

By considering its purpose, its aim, objectives, skills to be promoted and quality guarantees as mentioned above, this Master is subject to internal and external evaluation. External evaluation is being implemented by every National Agency of Quality Assurance (in Spain: ANECA – National Agency of Quality Evaluation and Accreditation) and by the responsible University. Apart from that, the Master is being evaluated by the corresponding academic team and by the participant students. The external evaluation made by “National University of Distance Education” (UNED) in Spain at the end of 2007-2008 presents the following results, on a scale of 1-7:

Table: Students' evaluation of UNED Master on ETD, 2007-08

General evaluation made by students	Master ETD	Other Masters	Difference
Good tutorial assistance	5,19	3,99	+1,2
Fast and quick problems solution	4,99	3,91	+1,05
Master offers possibilities of moving to other Universities	4,78	2,63	+2,15
Procedures to solve problems are appropriate	4,67	3,78	+0,89
Master general organization	4,48	2,43	+1,06
Coordination among modules	4,25	3,28	+0,97
The Master offers possibilities of practicum in other entities	4,00	1,97	+2,03
The Master offers opportunities for labour incorporation	3,50	2,67	+0,83

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## ONLINE MASTER'S PROGRAMS – BOLD VENTURES OR SCAMS?

*Éva Sándor-Kriszt, Anita Csesznák, Tamás Radványi, Budapest Business School, Hungary*

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Scan an international magazine and you'll find advertisements for Distance Learning MBA programs: Executive MBA programs, One-year "accelerated" courses, Double degree opportunities, even Doctoral programs – just name any program that suits you. Open your email letter box and, if your mail has not been properly filtered out for spam, you may find very "attractive" advertisements for Bachelor's, Master's and Doctor's degrees sometimes "without exams". Some of these advertisements are obviously scams<sup>1,2</sup>, but if you want to be fair, you will have to admit that forged diplomas and degree certificates had been known long before the computer age arrived.

Forgeries and scams are criminal rather than academic problems. The problem for the universities that launch master's programs is to set their genuine master's programs apart from deceptive ones. Operating in the virtual learning environment involves substantial risks that have to be avoided or minimised.

We are convinced that cyberspace is to be utilised not only in DL but increasingly in all other forms of learning. To make a choice between the various options is the learner's problem, just like when one makes a purchase through the internet. You must be careful: you should look for good, reliable "brand names", for dependable service providers and you must beware of anything that is too cheap or looks suspiciously attractive from other points of view. The task of the universities is to ensure that their programs meet the required academic quality standards. This paper is examining how this is being done in the Budapest Business School (BBS).

With the Bologna process being introduced in Hungary (and in other European countries), the walls between colleges (Hochschule) and universities are crumbling, and BBS is facing new challenges. Perhaps the most important one is that the school has to decide whether it will confine itself to offering Bachelor's programmes or wants to compete with other universities for Master's programmes. The decision has already been made and BBS is currently offering six Master's programmes (some of them new), and eight Bachelor's programmes.

The paper describes how the competitive edge can be sustained: the most important means being innovation and (international) cooperation with other institutions of higher education. Prudence safeguards us against taking rash decisions: innovations are introduced gradually after careful circumspection and consideration. It is quite a challenge to maintain high standards and reconcile them with the competition with other IHEs for recruiting more students in the context of a declining demographic trend.

An increasing number of new Master's programs are also offered in DL form. Initially, they will be fairly "traditional" in that the materials used by full-time students will be used in the DL programs, and their adaptation to the specific needs of DL will come later when we know more about the students and their needs. In plain terms: in the beginning we will be using the semi-traditional "correspondence course" methods and we will implement later and gradually the more sophisticated tools of DL already in use in other BBS programs. Thus we intend to use first "correspondence course" methods, then blended learning methods, and finally introduce online learning, step by step.

The paper also describes an ERASMUS project in which BBS has an important role. The objective of the project is to create a virtual campus for Small and Medium-sized Enterprises with a program that can lead to a Master's degree. The project is run by a consortium of six partner institutions including French, German and British universities.

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<sup>1</sup> Phony Degrees a Hot Net Scam <http://www.wired.com/techbiz/media/news/2000/03/35068>

<sup>2</sup> Diploma Mills Insert Degree of Fraud into Job Market [http://www.usatoday.com/money/workplace/2003-09-28-fakedegrees\\_x.htm](http://www.usatoday.com/money/workplace/2003-09-28-fakedegrees_x.htm)

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# A MODERN ECONOMIC APPROACH TO E-DUCATION

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## Summary

The article provides a modern approach to the economic aspects of e-ducation. According to the authors' opinion the conditions of methodological improvements and of other pedagogical researches are the existing and continuously expanding of e-ducation. However, it definitely raises economic questions. The answers to these questions refer deeply to the field of the innovation and competitiveness of education. All stakeholders of e-ducation confront the market expectations, and cost of education, and realize the individual and the social benefits as well. The article presents economic relations between ICT applications and the safety of knowledge transfer, where it narrows the gap between the pedagogical and economic approach in the framework of a self prepared geometric model. The results show that the same level of safety of knowledge transfer can be achieved at a certain rate of ICT application like at a 100% classroom education, but prospectively at lower costs.

## Economic aspects of learning in general

Analyzing the processes of education from the economic point of view sounds like an unusual perspective, because most of the analyses approach the field under discussion from the side of the human sciences. Shortage occurs also in the processes of education, forcing economisation, as it is valid in the case of other target areas of economic sciences as well. It confirms the justification of the economic approach. In addition, the economic analysis is limited by the fact, that the object of the education is a human factor. A constant uncertainty factor has to be calculated with at the development of the simplified economic models, which in this case is the human factor.

## Economic advantages of e-ducation

For an article dealing with the economic aspects of e-ducation is almost obligatory to discuss the collected and explained economic advantages, besides all other introductions and interpretations. Perhaps the stakeholders (students, institutions, state) of e-ducation are mostly interested in these facts.

It is necessary to group the economic advantages due to the above mentioned sectoral classification, which are actually strongly concatenated and are in close interaction with each other. In addition the authors distinguished the advantages on micro-, and macro-level.

Micro-level advantages occur as utilities of the participants of the e-ducation process. In the simplified model those are the students and the education institutions (supplier of e-ducation services). The benefits of the students are quite easy to recognise. First of all they occur from the reduction of the required school-attendance. It can result in a remarkable, one-two thousand euros save considering the whole training period of an average course. The general recognition of these can turn to a serious factor of the prospected demand increase in the future emerging for the e-ducation services.

The substance of economic benefits of the students represents the real challenge for the institutions providing e-ducation services. Namely, they can save costs, in other words the economies of scale can be reached, if the number of contact lectures can be decreased. However, costly developments (investments in human and tangible infrastructure or learning material improvement) have to be realized to reach and afterwards to exploit the economic benefits. In the opinion of the authors in this case, the intensifying of ICT application in the education process results automatically in the reduction of the safety of knowledge transfer. This can be explained with the declining of the systems' forcing strengths of provoking for learning (because of the continuously reducing teacher-student contacts), besides, according to the methodological improvements, the students have the opportunity to obtain the same level of knowledge with the same market value.

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## VIRTUAL MOBILITY COORDINATORS – UNKNOWN REALITY?

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### Introduction

The aim of this paper is to introduce the research conducted in the European Union exploring the position of virtual mobility coordinators. The goal of this research was to define the virtual mobility (VM) coordinator profile and to design the virtual mobility supervision scheme.

This research was developed in the framework of the project Ready for Virtual Mobility? (MoreVM). It is part of the Lifelong Learning Programme 2007 – 2013 and ERASMUS Virtual Campuses. The general objective of the MoreVM project is to facilitate virtual mobility (VM), encourage participation and enhance the efficiency of VM in higher education. Specific objectives of the project are: preparing students for VM and raising awareness of the importance of VM, providing support for colleges/universities in organizing VM, strengthening the co-operations between them and thus encouraging the development of joint programs.

### The aim of the research on coordinators profile

The project introduces the term virtual mobility coordinator (VM coordinator) and defines the virtual mobility coordinator profile. As we focus on the success of the students in the MoreVM programme, we also address the needs of the consumer colleges/universities, especially smaller colleges. For those who are interested in strengthening international collaborations and encouraging their students to participate in virtual mobility, e.g. international coordinators and teachers, but who may not have much experience with e-learning, we will provide support for the counselling and motivation of students and provide the colleges with support schemes addressing specific operational issues concerning virtual mobility.

The aim of the research on the VM coordinator profile was to define the VM coordinator profile and to design the VM supervision scheme. The profile reflects the qualities and competences of the staff involved in VM for providing efficient support to VM students. Research was directed by NEWTON College in co-operation with Open University of the Netherlands and College of Business Maribor. The research design and procedures were developed in co-operation between the project partners. NEWTON College collected the data on higher institutions that have already been involved in physical mobility in order to conduct this research on potential Virtual Mobility Coordinators.

### Research process and results

The results of the qualitative part reflect the situation in the Czech Republic, where virtual mobility is very new and there is a need for information. The answers of 198 respondents show that there is a need for the position of a Virtual Mobility Coordinator to assure successful participation in virtual mobility. An institutional background of the VMC is preferred with ERASMUS office in cooperation with study department. Direct relations with ERASMUS is strongly recommended.

### The profile of the virtual mobility coordinator

The implementation of virtual mobility has pointed out some new aspects of the role of an appointed Erasmus coordinator at a college/university, especially in the case where there is little or no experience with online learning/teaching. A VM coordinator may be a teacher, tutor or a person in charge of the international exchange of students. Most importantly is that this person is acquainted with the potentials and limitations of VM and has had personal experience with on-line collaboration in a virtual community to be able to present those experiences to the students in a realistic way. The profile of a VM coordinator covers the roles, functions and responsibilities of the consumer university/college staff that should be taken into account in order to, on the one hand, provide efficient support for potential VM students during the pre-virtual mobility phase, i.e. before they take part in a virtual mobility course and, on the other hand, to provide efficient support for students during their virtual stay at the provider college/university in order to enhance their performance.

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## THE DEVELOPMENT OF COMMON QUALITY CRITERIA WITHIN COOPERATION FOR NET-BASED LEARNING

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Per Lind, Luleå University of Technology, Brittmarie Myringer, Mid Sweden University,  
Bo Svanteson, UR (Swedish Educational Broadcasting Company), Sweden*

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Through SNH<sup>1</sup>, four Swedish universities, namely Blekinge Institute of Technology, Luleå University of Technology, Mid Sweden University and the University of Gävle, and UR (the Swedish Educational Broadcasting Company) are cooperating in a way that is giving substantial returns.

A primary goal for the cooperation is to develop courses. This goal includes the joint development and implementation of courses. The contribution of UR is widening the possibilities of making use of radio and TV media both for elements in a course and as a tool for recruiting students and marketing.

### Quality assurance

Another goal is a higher level of quality. Cooperation is in itself a driving force promoting quality and it also elucidates needs and areas with shortcomings.

The cooperation within SNH is taking place between independent stakeholders with their own quality criteria and their own responsibility for quality. The development and implementation of courses which can be included in complete study programmes entail special requirements.

Due to the particular nature of this cooperation, with the participating stakeholders handling the administration in solidarity through a rotating chairmanship and without external funding, there is no special administration and there are no staff who can follow up the different projects. This means that the projects must be steered in the right direction from the initial phase.

### Learning objects and quality criteria

The systematic work carried out on Net-based learning has pointed out a need for easily accessible tools, especially for the teachers. Therefore, work has started on the preparation of a basic set of tools in this area. This work has focused our attention even more on the need for common quality criteria that will enable the joint projects for developing courses and programmes to run as smoothly as possible and generate the results desired within the time appointed.

### The aim of the poster

In consideration of the above, the Board of SNH has drawn up quality criteria which are to support the cooperation within SNH and steer the work of the project groups, without competing with the criteria and independence of the different stakeholders. The criteria mainly concern the development work. SNH hereby wishes to share its experiences and also obtain opinions and comments.

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<sup>1</sup> Cooperation for Academic Net-Based Learning

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## FLEXIBLE LEARNING ENVIRONMENT – A PEDAGOGIC MODEL FOR STUDENT SUCCESS

*Karin Orving, Britt Englund, 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. One of the university's biggest challenges is to improve the number of students in the region who enter higher education courses. An important strategy to reach students is Distance Education (DE), which is one of the reasons the university has a plan for systematically developing DE. The aim is to point out the importance of several perspectives in the pedagogical work. This presentation summarizes the use of the university's pedagogical development plan as the basis for a learning model with four perspectives. The figure below shows the pedagogical model for learning with four perspectives.



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The plan for pedagogical development is built upon a pedagogical idea that takes four perspectives, all of great importance. The purpose is to create a framework in which lectures and students work is facilitated and to make the work easier, take away some disturbances, increase the quality and give the students the best possible chances of being successful. The plan includes support to teachers as well as to students and it includes support from the whole organisation. The situation is obvious: heterogeneous student groups with different preferences as to the distribution form (campus, distance and net). The university has refined the idea of flexible learning and e-learning to the idea of flexible environment for learning and the development work continues step by step. The university makes sure that the lecturers have the necessary qualifications by presenting a competence profile for Mid Sweden University (Miun-Lecturer-Profile) and that students have the necessary qualifications by presenting a Mid Sweden Student Profile (Miun-Student-Profile). Both lecturers and students have to know what to do and how to become successful in studies. The university has to take the necessary steps to stimulate and to facilitate the work and to guarantee that it can be done within a normal day-to-day-work. There are still many questions to discuss. A lot of decisions remain to be made and staff development to be carried out.

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# LEARNING TO E-TEACH – FIRST STEPS TO THE IMPLEMENTATION OF E-LEARNING

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Częstochowa University of Technology, Poland*

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## Introduction

The expansion of the internet and a growing presence of electronic media in our life make education as we know it a thing of the past. Distance learning becomes a new way of gaining knowledge, an alternative to the traditional education and existing educational structures. Thus, tertiary education institutions face the task of preparing a new model of education which will incorporate e-learning solutions. Undoubtedly, it is a time-consuming process, where both hopes and fears are voiced by students as well as academic staff. Therefore the adopted solutions should serve the purpose of integrating various forms of education; they should support the traditional system instead of replacing it. Being aware of the expectations and possible difficulties, the Częstochowa University of Technology has initiated activities that will lead to a gradual introduction of e-learning to the programmes of study on offer.

## Project description

There are no systemic solutions adopted at the Częstochowa University of Technology. It is the individual effort of particular faculties based on the enthusiasm and involvement of a small group of employees. The team working on the project established its primary goal to be acquainting academic teachers and students with e-learning and preparing them for this new form of education, while building basic technical infrastructure and setting the standards for distance learning at the same time. It was agreed that the target educational model should be blended learning, where the content delivered electronically will supplement the traditional classes. The project was launched on 1st of September 2008, will continue till 30th of September 2010, and is to be carried out in four stages:

1. Stage I – Gaining knowledge – The aim of this stage is to obtain knowledge concerning the existing technical and organizational solutions in the field of e-learning applied by other universities, their implementation experiences as well as the direction of changes. Simultaneously, a survey study has been conducted to diagnose the needs and the extent of knowledge regarding e-learning among both teachers and students of the faculties in question.
2. Stage II – Organizing knowledge – includes tasks that can be divided into three areas: training the academic staff in e-learning, starting a server and a platform as well as installing software in support of the development of the e-content, establishing requirements and guidelines relating to the preparation of electronic teaching materials as well as pedagogical recommendations for the staff.
3. Stage III – Applying knowledge – involves the preparation of course scenarios and content and their multimedia recording. The teachers should follow pedagogical guidelines when conducting e-learning classes and make use of the incorporated technical tools. At the same time, a student manual for using the portal will be prepared.
4. Stage IV – Spreading knowledge – The last stage involves launching selected courses in order to test the solutions adopted and update the courses having reviewed the assessment.

## Conclusions

At present, the first stage of the project has been completed. The Częstochowa University of Technology is only starting its e-learning activity. The University authorities are facing a difficult decision relating to the choice of technology and the way such education should be organized. It will be necessary to develop certain standards applicable to e-learning. All the decisions will depend on the development strategy adopted for online education.

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## LEISURE IN THE CYBERSPACE QUANTITATIVE AND QUALITATIVE CHANGES OF LEISURE TIME BUDGET OVER THE PAST TWENTY YEARS

*Maria Truszkowska-Wojtkowiak, University of Gdansk, Poland*

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My twenty years long research of free time budget indicated dramatic changes in the culture of spending free time. A significant part of the changes was caused by the development of electronic media, which, as a result, reduced the number of the old forms of spending free time and gave rise to the new ones. Less and less time is devoted to spontaneous physical recreation (walks, sports games, etc.) and more and more time is spent on watching TV series. Physical activity is replaced by watching sports events. The need for competition as a psychological element of participating in sports games was replaced by participation in competition of others.

Active mode of participation, including both mental and physical activity, is the fundamental requirement common both for higher and lower forms of spending that time. Interactive experiencing is an important element here. Although electronic media usually involve "passive experiencing" of free time, they also often evoke new forms of activities, even leading to addiction in extreme cases. It refers mainly to computer games with elements of gambling and (or) aggression, as well as cyber sex. Less often: watching commercials, blogs, information portals or films available on the Internet, and finally, using educational portals. Classification of various forms of spending one's time in the category of leisure time was the main difficulty. The respondents gave various classifications of their time in the cyber space. It was actually the ways of education in cyber space by the use of ODL that the basic differences referred to.

Developing a "free time" way of participation in educational platforms is a great opportunity for pedagogy. It can be clearly seen both in the case of adults and children. It confirms the recently popular approach in the pedagogy of leisure time that free time is to be a special kind of state of mind.

The research indicated both significant differences in free time budget and in the forms of spending time declared as leisure time. Free time (as a time out of work) can be simply divided for Recreation (as physical activity) and Leisure (as a mind activity).

Than Recreation is:

- walks
- fitness activities, sports games, rehabilitation
- open-air events

And Leisure is:

- social meetings
- the cinema, theatre, concerts, cultural activity
- reading books, newspapers and magazines
- cyberspace, (computer games, the Internet, portals)

The changes of both free time budgets during the transformation period and the ways of treating the forms of spending time (as leisure and carrying out duties) makes it difficult to classify forms of spending time especially in cyberspace.

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## LEISURE TIME – SACRUM vs. PROFANUM FROM ANCIENT EDGES TO INFORMATION SOCIETY

*Maria Truszkowska-Wojtkowiak, University of Gdansk, Poland*

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We are used to praising the ethos of work as contributing to progress. Yet, the culture of the leisure time seems to be equally important, if not crucial, for the development of society. In this context, it can be referred to as the ethos of leisure, and many researchers agree with the point of view mentioned above. Modern problems are related to the electronic media influence on leisure time management. Since there are no strong measures aimed at promotion of superior forms, profane overcomes sacrum.

Following Max Kaplan leisure terms I am going to focus on sociological approach, epistemological conception and humanistic (classic) one. This approach inevitably takes us back to the ancient (classical) notion of free time as a sacrum understood as a state of mind related to contemplation, discourse and creativity. Greek epics of Hesiod and Homer reveal the basic features of sacrum time, which were further creatively developed by Socrates, Plato and Aristotle. Sacrum, understood as mystical contemplation, was advised in the Torah (Pentateuch) as well as in the Bible. When emigrating into the cyberspace, the modern culture took along a part of cultural heritage.

The conviction that free time, including the time spent in the cyberspace, should not be degraded to profane is the meeting point of the classical and the modern notions of culture.

What links the classical concepts of free time culture with today's proposals of "higher forms" of spending leisure time, also in the cyberspace, is the fact that it should not be profane time.

The share of profane in the time management nowadays as well as in the past is difficult to estimate. Nevertheless, it is obvious that fewer and fewer intellectuals are aware of the threat that inferior forms of spending leisure time pose on modern culture. Regardless of the pathological phenomena caused by man's exodus to the cyberspace, it is important to point out and develop the forms of cyberactivity that can contribute to the creation of a new contemplative leisure time spending model. The occurrence of such phenomena is easy to indicate on the modern Internet and audiovisual media, the Internet portals in particular.

The development of interactive forms of knowledge acquisition, also learning by fun (play), is a big opportunity to avoid the bad influence. However, the difficult question of dialogue between human and machine emerges. Since it is the machine that more and more often plays the part of an arbiter, the dialogue can no longer be called Socratic. Still, thanks to the progress of modern, digital (electronic) technologies, the number of people in developed countries who can actually make the "thirst of freedom" come true.

As people used to gather on one Agora for discussion and on another for trade in the Ancient Greece, so there exists such a division in the modern media. We continue the traditional division between scholasterion, that is the sacrum, concentrated on the creative activities, and gymnasium (gym), the profane, where we work on our physical condition.

Plato praises the discursive and contemplative time called scholé (σχολή) in his "Symposium" (Συμπόσιον), but the idealized state could degenerate into an axiological gibber of a drunkard. Also today, the exodus of the humans into the cyberspace can eventually mean an escape into the cyber-sex, cyber-violence, generally speaking, into cyber-pathologies. The modern society might degenerate just like the ancient did.

Nevertheless, there is a significant difference: the leisure time accessible for all is expanding and the new society shall become a leisure society. Cyberspace will only constitute one of the "spaces" of the 21<sup>st</sup> century society.

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# LEARNING E-DEMOCRACY: THE URBINO BLENDED LEARNING MODEL APPLIED TO E-GOVERNANCE

*Giovanni Torrisi, Federico Savini, University of Urbino, Italy*

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## The context

E-learning has eventually made possible organizing and maintaining effective and wide-spread transnational and multicultural virtual campuses. In many instances it has defied and won its battle against distance, being it a physical, linguistic or cultural one. Nevertheless not all issues have been solved, instead some different problems have risen. Lack of motivation in distant users and difficulties in creating a common identity and a suitable user social environment are the new challenges for sustaining an effective e-learning environment. At the same time, spontaneous virtual communities have increased exponentially and ICTs have been extensively used in order to facilitate networking and communication between distant users. They have stimulated new opportunities of interaction between users and they have stimulated a new pedagogical approach to e-learning.

Representative classical democratic models and the governments of our times are facing similar challenges and parallel opportunities. Lack of interest, political anomy and a scarce politicised civil society call, in fact, for new approaches in order to promote an active citizenship. Policy making can benefit already from ICTs and several are the examples already (eVote for instance). At the same time, citizens can find in institutional settings the space where to learn public matters. E-learning practices in public decision making have potentials to reduce the gap between the politics of technicians and the civic society of users and citizens. Opening the e-learning platforms to political issues, as well as opening the institutions to distant users is a delicate process. It entails both social and technical difficulties. More reflection is needed on which might be the most effective form of e-learning platforms in order to join effectively a learning and decisional processes.

## The objectives

This work is aiming at presenting how the Urbino innovative blended model, with Web 2.0 collaborative learning strategies built in, overcomes some of the problem mentioned above in two very different settings but with astonishing similar problems: the virtual campus and the democratic arena. The crosses analysis of those two communicative practices can show whether there are the conditions to create a learning process useful for the classical teaching and for learning about democracy and active citizenship, improving democracy with the involvement of virtual networking. Urbino blended model 2.0 tries to blend pedagogical, technical and content related issues into a unique virtual campus and collaborative experience, balancing the different dimensions in a distinctive manner. The paper disentangles these dimensions and highlights both pros and cons of the model adopted, describing the way in which the classical challenges experienced by e-learning environments on one side and the democratic *virtus* on the other, have been addressed. Moreover, the Urbino 2.0 learning model has been enriched through a Web 2.0 perspective, promoting p2p (peer-to-peer) collaboration in the generation of knowledge.

In this analysis it is assumed that societies, which are increasingly fluid (and socially fragmented), generate and treat information differently than before. It is argued, then, that learning agencies should acknowledge and take advantage of the new 2.0 paradigms. The cases selected show three possible setting in which the goal of learning can be productively foster by using those technologies of communication.

## The case studies

The paper presents three case studies in which the Urbino learning model has been adopted going from a more pedagogical setting the first two to a more political one the third: Sociologia online, E-urbs (European Master on Comparative urban Studies) and E-democracy Marche.

## Conclusions

The Urbino web 2.0 blended model helps in transforming the challenges experienced by the classical e-learning approaches into resources for each of the stakeholders involved into the learning process (e.g., students, scholars, partners, institutions) providing a significant added value. Moreover, the model has proven itself to be of use also in promoting political and social participation, showing how web 2.0 can be effective in facilitating education in high level academic education.

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## LIFELONG LEARNING SCENARIOS IN 3D WORLDS

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Multi-User 3D Virtual Environments (MUVES) have called significant attention among educators during the last years, mainly pushed by the fast development of user rates of virtual worlds like Second Life. Currently, pilot projects are being developed and implemented on institutional level or as bottom-up approaches, networks of institutions or thematic networks evolve. However, there is still a lack of established theoretical and methodological frameworks and clearly arranged collections of models for good practices. In addition, many practitioners and experts in the field of education still wonder how an effective use of MUVES in education would look like.

The LLL3D project aims to overcome this lack and to contribute to create the path for the next stage of developmental phases in integration of MUVES in education. The general objectives are:

- to collect, develop, test and promote scenarios for learning with MUVES;
- to create a related project space in Second Life;
- to create a respective learning community with participants from different sub-communities in lifelong learning.

### Outputs

#### *Learning scenarios and learning scenario grid*

The methodology for learning scenario development is structured in two main phases. In Phase 1 a variety of learning scenarios will be identified by collecting case studies of existing educational projects in Second Life and organized in multi-dimensional clusters (possible dimensions are: target group; learning methodology; formal/non-formal/informal learning; subject; etc.). The first version of the grid containing learning scenarios identified in the case studies will in Phase 2 be refined by further, more detailed case study analysis and scenario testing in-world. Results of the testing phase will lead to a final set of learning scenarios.

#### *Bazaar of educational tools*

The Bazaar on the LLL3D island in Second Life will provide an extensive collection of educational tools in virtual worlds and especially in Second Life, and will guarantee the dissemination of this collection to the wider educational community via a virtual exhibition on the LLL3D island and a public web space. In order to promote ideas for new educational tools in virtual worlds, a public competition of ideas will be organised. The best ideas will be selected by a committee of experts, produced and given to the community for educational purposes.

#### *Community building*

The LLL3D island and the project web space will contribute to community building among practitioners in the field of lifelong learning. The Bazaar, the scenarios and events in Second Life will attract potential users and will help to disseminate intermediate and final project results.

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# PODCAST – IT'S TOO EASY NOT TO TRY

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## Introduction

For some time the term 'Web 2.0' has been gaining popularity among the Internet users. Web 2.0 is a general term used for web technology where the resources are created by the users, for the users and, additionally, are commented on and evaluated by the users. Not surprisingly then, another name for the concept is 'Read and Write Web'. Generally, the term Web 2.0 covers such tools as: blogs, podcasts, video sharing sites, social networking, social bookmarking and folksonomy (a new term), as well as wiki, RSS feeds, virtual worlds (Second Life) and even Google Maps and Google Earth.

Podcasting is a technology for distributing audio files over the Internet. Podcasts, or audio programs, are most commonly broadcast as a series of episodes or topics, and are made available through RSS or Atom technology, aggregating the content into feeds, which a variety of blog aggregators and specialist blog reading tools can make use of. The application of RSS (Atom) technology makes it possible to subscribe to or automatically download the new content. Podcast is becoming a very popular tool in information services and education. The Internet offers loads of free and paid lectures (mainly in English) published by universities across the world, Berkeley and Stanford being the leaders here. Also in Poland the Polish Radio takes seriously the new technology enabling listeners to download broadcasts in MP3 format. Podcasts can be downloaded from TVN24 and even BRE Bank websites. However, when confronted with the large number of podcasts published worldwide, it seems that Polish podcasters have a lot to make up for.

## Podcast in education

Education forms a separate area in which podcasts can be used. While across the globe podcast is widely used in education, in Poland this field is almost completely unexploited. Possible ways of using podcasts in education include: on-line lectures in the most natural form (+RSS!) – students can focus on the lecture instead of trying to take notes; multimedia presentations; additional materials; reference materials, authentic materials, audiobooks, fairy tales, press articles and radio broadcasts, radio dramas; interviews with experts and leading authorities on various topics; with podcasts it is possible to repeat a lecture for slow-learners or students who were absent; more advanced or highly motivated students may be provided with additional learning content (instead of individual tutoring); just in time learning; multitasking – listening to lectures while doing other things; reaching students with special needs; linguistic education/language training; motivation – using tools familiar to students (which student does not have an MP3 player or an all-in-one phone?), students' work open to the world, comments, discussions outside the classroom, reflective thoughts; internet conferences, talks with experts, guests, and other students worldwide – classroom open to the world; such talks may be available to many students, groups, or classes; podcast add variety to classes (from the perspective of both students and educators – no need to repeat the same thing several times); answers to frequently asked questions; introducing a rich teaching environment.

In the paper the anxieties and difficulties relating to the use of podcasts in education have been discussed. They may be grouped into four categories: technology, copyright issues, fears concerning sharing resources on the web and time issues.

## Conclusion

Educational podcast is a fresh topic in Poland; it is rarely used at schools and universities. The reason for that might be the difficulties and anxieties discussed in the paper. The situation, however, seems to be mainly caused by ignorance on the part of teachers and lecturers. The effort should be made, therefore, to familiarize them with the tools and techniques that the newly emergent technologies offer.

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## THE PRESENT AND FUTURE OF EDUCATIONAL VIDEO GAMES AND A GAME SCENARIO PROTOTYPE

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After a short introduction of game based learning and educational video games characteristics, a minimal scenario prototype created for the education of low and middle skilled persons in the tourism sector is being introduced within this paper.

Game Based Learning is an effective way of increasing the impact of playing in education and other parts of life especially video games with the help of ICT and computer graphics. In the case of video games, rewarding, advancement and desire to learn and experience new things make them highly motivating and engaging for everyone. We can classify video games into two main groups: offline and online (Casual and Massively Multiplayer Online Games) games. After the short introduction and brief industry facts of previously mentioned groups, their educational perspectives are examined. The time required to learn, accessibility (getting the necessary updates and patches), and system requirements are key characteristics in the case of educational games. After getting to know them we may assert that MMOG-s are best suitable for learning complex methods and skills therefore they could be extremely useful in higher education. Casual games are best for middle and low skilled persons, so they could be used in primary and secondary education, and finally offline games are not advised to be used for educational purposes, because of their lack of multiplayer support and accessibility problems.

In the paper, a minimal scenario prototype is being introduced. It was created in the module editor (Aurora Toolset) of a commercial MOG (Multiplayer Online Game) titled *Neverwinter Nights (NWN)*. This scenario prototype was created for an ongoing European Leonardo da Vinci project called *Touareg (ES/07/LLP-LdV/TOI/149018)*. *Touareg* (that stands for *Tourism platform for European Educational Games*) aims at developing innovative training and learning processes and practices in the tourism sector using game based learning. Experiences will also be exploited in the *E-Learning Manager (ELM) (LLP/LdV/TOI/2008/IRL – 507)* European Leonardo da Vinci project. Main competencies and certain learning outcomes were identified before the creation of the scenario prototype that were used as prerequisites during editing. The target group of this minimal scenario was middle, low qualified front office personnel. The prototype is titled: "When changing the guest's room is necessary" and the game setting is a middle sized hotel in a town where the player can learn about hotel management. In the next section of the paper, the game module is being introduced in more detail. Final conclusions of the scenario prototype based on the educational purposes are: learning the basic controlling of *NWN* takes moderate time, and the accessibility of the game is better than of an offline game, but worse than web browser games. The game client uses server-side updates by a patching tool that makes updating easy. System requirements are also moderate because the game was published in 2002, therefore it will work on integrated video cards. The disadvantages of *NWN* are that the game clients have to be installed separately on each computer of a training room, and multiple licenses need to be purchased by the institutions. Intellectual property could also be a problem. One last disadvantage is that the game setting is in the middle ages, but it can be overcome by using the so-called modern package. In spite of these disadvantages, the game could be a perfect tool for game based learning. The editing tool and server application are easy to learn, and module creation needs shorter time compared to other game creation tools. The *NWN* game also has further possibilities that were not included in the scenario prototype. The game creation toolset supports multiple languages that could be very useful in countries or regions where cultural diversity is relevant. It is also possible to solve the tasks in groups because the game supports multiple players at the same time, therefore problems can be solved more efficiently and within less time if players cooperate. A *DM (Dungeon Master)* client is also included in the game package that makes possible for tutors to interfere in real-time into the game environment by creating unexpected situations for the players. This kind of interactivity could be the future in education.

In the last part of the paper, some industry facts introduce video games in the global recession and an analysis is also cited to help imagine the possible future of the video game industry and educational video games. If people who tend to escape reality into virtual words after having lost their jobs could learn by playing such games, the world economy would benefit in multiple ways. After taking a look at these trends, we may conclude that game based learning will have a strong role in the future as more people start playing video games.

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# ELECTRONIC EXAM SYSTEM FOR STUDENTS ABILITY IN PROGRAMMING

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## Summary

In this paper the authors present the circumstances of teaching, e-learning, examining of programming in Dennis Gabor Applied University, Budapest, Hungary. "What did we invent for tomorrow?" We have developed a new Electronic Exam System (EES) for two subjects of programming. We present here the circumstances of teaching and examinations in programming, as well as our electronic curriculum of programming. The process of the examination in programming will be discussed in details. Finally we enumerate the benefits of our Electronic Exam System.

## Electronic curriculum of programming

In the repository of our Learning Content Management System, called ILIAS the doctrine object guides and subject descriptions can be found in format PDF. The Java reference book is a SCORM according to a standard, with a framed appearance, hierarchical table of content, implies pictures, screenshots, source codes, inner and exterior references. The students get the separate CD, including JDK, installing kit, sample source codes, and setup guide. It is useful to practising independently. An electronic students' compilation of examples is available from the repository. The necessary definitions, fundamental concepts, examples have been placed in a thesaurus.

## The process of examination

The exam of the subject of Basic of programming consists of two rounds (both may take maximum 45 minutes). In the first part of the 1<sup>st</sup> round students receive 5 test questions out of 211. The program selects topics in a random order. In the second part of the 1<sup>st</sup> round students receive 1 test question from the 30 questions with pictures from the UML topic. That is altogether 50% of the total score. Only full correct answers are accepted. The examining program evaluates the test. In the 1<sup>st</sup> round at least 30% is necessary to step forward to the 2<sup>nd</sup> round. In the 2<sup>nd</sup> round there is one coding exercise. In the course of the solution optional pre-installed development tool (Notepad++, NetBeans) can be used by the students. The program must run, should not contain any syntax error. The examining program discovers all syntax errors. The program – prepared by the student – may be the solution of the published exercise only. The teacher evaluates the coding task. Partial result is accepted. This is worth another 50%. If student is ready, it is necessary to try the program/class in the development tool. If it is running, to the student makes a copy from the source code onto the clipboard and inserts it into the examining program.

## The benefits of the new EES

- Every test question is generated automatically, randomly.
- The test database can be easily modified and extended.
- Tests can be evaluated automatically.
- The database of the coding exercises can be supplemented easily.
- The exam sheets can be stored in HTML format.
- The exam results can be stored in a database.
- Statistics from the exam results can be made quickly.
- Everything gets to keeping in a log, easily retrievable.
- 15 students per our can take an examination.
- Both of examination programs can be developed and upgraded simply.
- We do not use paper unnecessarily.
- We do not have to make copies of test sheets for every exam.
- After the development of the software, we do not have to prepare for every exam.

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## MODELLING SIMULATORS AS EDUCATIONAL TECHNOLOGIES FOR HIGHER EDUCATION

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Using e-learning in order to enhance traditional teaching process has become common practice nowadays. It makes the process of learning more efficient, provides more stimulating educational environment and allows learners to become more actively involved in the learning process. E-technologies are viewed by many teachers as an extremely effective way of delivering information to a large number of learners but simply providing a lot of information is not a very efficient method to educate students. Besides theoretical knowledge a student should acquire professional skills and qualifications necessary for his future profession. And modeling simulators are ideally suited for this purpose.

Growing evidence shows that simulators make a positive impact on students' performance. The first reason for this is that they differ greatly from traditional paradigm of training. Secondly, they encourage systematic learning as involve the process of controlling and thirdly, motivate students as they have to constantly compete with each other. And finally, systematic using of simulators leads to new forms of final control, shifting from checking of pure theory to controlling of skills and knowledge acquired in the process of operating the simulator.

In the framework of "Management of state purchases" course the "Electronic order" simulator dealing with operating of state purchases has been created. The purpose of this simulator is to learn how to allocate electronic state orders through the auction.

The necessity for such simulators is obvious. The electronic trading system is underused as there are no standard technologies and tools to demonstrate and teach the mechanism of transactions made in the process of forming bids and offers for products (work and services) at the e-auctions.

So a special simulator imitating real electronic trading session will help to better teach how to conduct all the procedures of electronic trading session in order to allocate state orders.

In the Russian Federation state purchases laws are comparatively new which means their further development and elaboration. So it is quite reasonable to test different amendments to the legislation on the simulator that can model electronic auctions. On the other hand auction participants will need real-time training in order to better percept new updated technologies.

The distinct feature of the created simulator is that it can not only imitate present day auction procedures in the virtual form but is also able to modify and perfect such procedures.

The mathematical model of the simulator can foresee potential amendments in the process of trading in the meanwhile any substantial changes of the simulator itself are not needed. To provide this function special algorithms have been installed which allows broadening of possibilities correlated to the set of terms and conditions stated by the present-day law.

In their teaching process professors of the Plekhanov Academy use problem-oriented methods focusing not so much on the delivery of theory but on practical solutions when students get special tasks, participate in role plays and make decisions in cases. While solving and analyzing these tasks the students themselves deduct certain economic laws.

That is why so much emphasis is placed on the development of modeling simulators as a part of the whole educational complex which means close cooperation of course lecturers, specialists in the methods of teaching and programmers.

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# MICRO-TRAINING, OPEN EDUCATIONAL RESOURCES ON GEOGRAPHICAL INFORMATION SYSTEMS (GIS) – FROM DAILY USE OF GIS TO PROFESSIONAL TRAINING AND MASTER COURSES

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## GIS – from daily use to professional training and master courses

With today's rapid changes in socio-economy and technology, knowledge and learning are critical issues for most companies and private and civil service organizations. The needs for competence development range from short informal courses to formal educational programs at university level. Informal learning is less predictable. It is nevertheless a very natural way of learning, although it is often not perceived as learning. In practice, however, informal learning is considered more effective than formal learning because it is personal, real and the learner is responsible. Traditionally, universities mainly offer courses with credits, while the real needs are far more for informal courses on demand, flexible in time, path and pace, and with a range of complexity. Normally, it is anticipated that formal courses are offered by non-academic or private organizations. The main objectives of the project eGIS+ (2007-2009) (Leonardo da Vinci, LdV pilot project, under the Lifelong Learning Program, LLP, Transfer of Innovation, Tol) is to implement the knowledge and understanding of Geographical Information Systems (GIS) to a broad range of people in society targeting groups such as teachers and pupils in primary and secondary schools, students and researchers within higher education, employees in private- and civil service organizations and public in general. In a previous project, E-GIS (LdV 2002-2005) modules up to a Master Programme were developed. Experiences from this project and demands mentioned above are taken on and further developed in eGIS+. According to Chrisman (2002) GIS is a system of hardware, software, data, people, organizations and institutional arrangements for collecting, storing, analyzing and disseminating information about areas of the Earth. The demand for competence development within GIS in Europe is high, with heavy demands for short courses; particularly Internet based training with flexibility in time, space, level, content and pre-understanding. The above needs comprise deeper understanding of digital mapping, database handling and tools for GIS analysis. The development and increased accessibility of public spatial databases is an incentive for increased GIS integration as GIS more and more becomes a natural part of daily work included in most fields of activities. Ten partners from eight countries in Europe participate in eGIS+. As the target groups are highly diverse, content, software, media presentations etc, will be adapted to cultural and language differences within the partnership. All educational material is available at [www.e-gis.org](http://www.e-gis.org) free of charge as open resources (the social web, web 2.0 is mainly used). Responses already show appreciation for the creative and innovative approach of the project with tasters, micro-training, re-usable learning objects and Open Educational Resources (OER) from two minutes, two hours, two days and two weeks and up to advanced Masters Courses.

## The eGIS+ portal and its navigation structure

In eGIS+, the Moodle based web-portal is designed and developed with a pilot already in place, [www.e-gis.org](http://www.e-gis.org). The idea with the portal is to inspire and disseminate information about GIS and the implemented courses and to use it for communication between partners, tutors and students during course implementation. The portal is designed in the form of "clouds" representing areas such as; What is GIS? Games, Do it yourself, Jobs, Find data, Education and Test your GIS knowledge. There is a wide variety of information available in the portal, with presentations ranging from short modules of a few minutes, on the first level, up to a couple of hours and a few days at more advanced levels. These are presented as video clips, audio, pictures, text with local GIS examples from partner countries adapted to different target groups and at different levels. The modules will be translated to partner languages, with open access. The first level of course materials are modules which can be used for micro-training and as Open Educational Resources (OER). All materials and necessary GIS software are free for use for everyone interested (end-users). The second level consists of two week courses, 3 ECTS: firstly an introduction to GIS, secondly a special subject e.g. archaeology, and thirdly covering the implications of Spatial Data Infrastructure (SDI) on contemporary GIS activities in EU. The third level provides revised GIS modules from the previous E-GIS 10 ECTS courses. Information about the project has been disseminated in various European contexts and welcomed for its new concepts consisting of a broader range of target groups together with the use of GIS material with the same content but at different levels of pre-understanding, demands and complexity.

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## EDUCONLINUX: FREE AND OPEN SOURCE SERVER BASED ON LINUX FOR MULTIMEDIA CLASSROOMS IN SCHOOLS AND UNIVERSITIES

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The EDUCONLINUX project aimed at the creation of a server-based open-source platform that would be specifically designed to support distance learning over the Internet users. The platform can support pedagogical forms for students to learn, revise and practice from anywhere with an Internet connection and not only in the confines of the school. The overall objective of the EDUCONLINUX project is to improve educational opportunities through server-based distance learning that sets new standards in value for money. The learning provision can enable the participation of user groups previously disenfranchised and improve the flexibility and effectiveness of learning for all. The poster we will demonstrate in practice how different people from different levels of education (primary, secondary, university) can use the platform in order to prepare their on-line courses.

We consider EDUCONLINUX as an innovative European project. There is no directly comparable resource with a distance learning focus currently operating anywhere in Western Europe. The project builds on the collective innovation of Open Source communities adding value to existing resources within a budget that would be entirely unrealistic for a similar project based on proprietary software tools. Since the software tools produced will also be Open Source, it provides the potential for others to build from this work freely ensuring best scope for high return on investment. The project draws on a unique blend of skills, both technical and pedagogical, from a very representative sample of European Member States. The EDUCONLINUX project will enable the development of a broader range of innovative pedagogical forms and methods associated with distance learning.

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# LIFELONG LEARNING: CONTINUING MEDICAL EDUCATION THROUGH MOBILE DEVICES FOR HEALTH CARE WORKERS ON THE MOVE

*Inge de Waard, Maria Zolfo, Carlos Kiyon, Institute of Tropical Medicine, Belgium*

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## Mobile solutions for global workers on the move

This poster focuses on delivering mobile continuing medical education (CME) to health care workers (HCWs) that are on the move in an international setting. Delivering relevant lifelong learning content to a diversity of professionals is a technical challenge. However the need to transmit the latest medical knowledge to specialists is crucial. The Institute of Tropical Medicine (ITM) of Antwerp, Belgium has built a lifelong learning strategy to keep HCWs updated on AntiRetroviral Therapy (ART) for HIV/AIDS related areas.

Although standardization of mobile content is only in its infancy, we have applied the guidelines for mobile content development of the Mobile Web Initiative. This has resulted in increased accessibility of the mobile CME modules, minimal download size of the content, minimal download cost and enabled us to reach as many different mobile cell phones as possible. In addition to this we have designed and delivered CME modules with the flash interactivity, aiming at the latest mobile devices equipped with full multimedia features and addressing the need of the high-tech medical professional that roams the globe. Finding solutions for both low-end and high-end mobile courses demands both a creative and an innovative approach, addressing different learner skills.

## Providing lifelong learning

Mobile learning can be a lifelong learning solution, because it caters to the context and time schedules of the learners themselves. The purposes of ITM's mobile CME addition are:

- To facilitate the introduction of high-quality antiretroviral (ARV) care for HIV/AIDS patients, by providing remote consultations in the field of ARVs and management of opportunistic infections to clinicians.
- To provide continuous education in the field of HIV/AIDS care to HCWs on the move all around the world.

## Problem

How can you keep in touch with HCWs that are on the move in an international setting? A stable internet connection is not always available; however most of the HCWs do own a cell phone with (limited) internet access.

## Implementing mobile solutions

We focused on four specific technological and financial restraints:

- Limit download size for the CME-modules while keeping standardization in mind;
- Limit the development cost of mobile courses;
- Provide mobile multimedia as an option when relevant;
- Link it to an accessible platform.

## Conclusions

When technical challenges like download size and standardized content are taken into account, delivering mobile content to internationally located HCWs on the move is possible. The guidelines of the Mobile Web Initiative proved to be worthwhile in developing mobile CME modules that are accessible by a large diversity of mobile devices. Future trends indicate that the next generations of phones will have increased multimedia capabilities. Mobile multimedia is possible and cheap to deliver, and the high-end user group is growing rapidly on all continents. Overall the mobile CME modules answer a need enabling HCWs to access the latest medical information relevant for their expertise.

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## DESIGN AND IMPLEMENTATION OF E-LEARNING 2.0 COURSES AT UNIVERSITY OF GDANSK

*Stanisław Wrycza, Michał Kuciapski, University of Gdansk, Poland*

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### E-learning Experience of University of Gdansk

University of Gdansk has a long record of e-learning courses development and use. At University Educational Portal (<http://pe.ug.gda.pl>) there are hundreds of courses supporting tens of disciplines educated by teaching staff. Such e-learning techniques as: content development (PPT, Word, PDF, documents, images, and HTML), chat, forum, quizzes, questionnaires, online workshops, tasks are by and large used by many teachers at all university faculties. Both commercial and e-learning platforms were used to support the University Educational Portal, although Moodle platform is dominant now.

### E-learning 2.0 Challenges

The challenge of e-learning 2.0 requires and stimulates the change of University e-learning strategy including supplementing the hitherto knowledge and abilities of academic teachers. E-learning 2.0 comprises a number of new teaching methods like: wiki, blogs, RSS, media sharing, webcasting (podcasting, videocasting, screencasting, live streaming), e-portfolio 2.0, social bookmarking, folksonomy, social operating systems, learning collaboration tools, webquests, live learning, virtual spaces, virtual worlds, virtual laboratories and mashups.

### E-learning 2.0 Implementation

The EU program Human Capital supports promotion and spreading of innovate, creative concepts connected with e-learning 2.0 among academic teachers in Poland. In the result of Call for Proposals, the numbers of courses were selected for development at University among others: Design and Implementation of e-learning 2.0 Courses, Structured Bioinformatics, Fusions and Acquisitions, Student Business Initiatives.

The project team of Department of Business Informatics has been developing the course for academic teachers which enables them to acquire the knowledge and skills, necessary for development and running the e-learning 2.0 courses with their versatile palette of Web 2.0 techniques. As for the other selected courses, the screenplay has been already completed and reviewed in the first stage of the project. In the second one, the above mentioned course will be developed by professional instructional designers, graphics, programmers, multimedia specialists and systems administrators with such tools like: Lectora, Adobe Creative Suite and CorelDRAW® Graphics Suite. Finally, the course will be implemented in academic year 2009-2010 for the interested academic teachers. It is expected and forecasted that the teachers (30 in the first course run) will develop succeedingly their own e-learning 2.0 courses for the specific subjects and groups of students.

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# E-LEARNING AT GDANSK UNIVERSITY OF TECHNOLOGY – FROM 1995 AND BEYOND 2009 – AUTODESK AUTHORISED TRAINING CENTRE CASE

*Anna Grabowska, Gdansk University of Technology, Poland*

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## Introducing Autodesk Authorised Training Centre at Gdansk University of Technology

Autodesk Authorised Training Centre (ACSA PG) at Gdansk University of Technology (GUT) was established in 1995. In the period 1995-1997 courses “Basics of AutoCAD” were delivered for students from Civil Engineering Department in face to face (F2F) mode. In 1998 several students took part in an experimental course in a distance mode. They were given printed course materials. Consultations and final assignment submission were done by e-mail.

## Why Autodesk Authorised Training Centre at GUT and why Moodle

Authorised Training Centres<sup>1</sup> offers Autodesk-approved training of the highest quality. Autodesk® Training Centre (ATC®) sites receive a variety of software, support, and services to help them deliver high-quality training to professionals in their community. Only Authorised Training Centres offer CAD training that is measured, evaluated and approved by Autodesk and can be awarded with Autodesk certificate. Today there is more than 1200 ATCs across the world. The majority can offer traditional way of teaching.

ACSA PG can offer distance learning courses based on materials produced under the TeleCAD Leonardo da Vinci project (1997-2001)<sup>2</sup>. In the first phase TeleCAD LMS<sup>3</sup> was developed and implemented by Distance Education Centre at GUT. In 2003/2004 Moodle<sup>4</sup> replaced the TeleCAD. Moodle is a Course Management System (CMS), also known as a Learning Management System (LMS) or a Virtual Learning Environment (VLE). Moodle is free to download and registration is voluntary, so full information about everyone that uses it is not available. However, some interesting graphs and numbers are located at the statistics page<sup>5</sup>.

The first implementation of Moodle at GUT was done in the framework of Leonardo da Vinci programme EMDEL (European Model for Distance Education and Learning 2001-2005)<sup>6</sup> and the second one was done under the CURE project (Centre for Urban Construction and Rehabilitation: Technology Transfer, Research and Education, Research Framework Programme 5, 2002-2005)<sup>7</sup>. After closing Distance Education Centre at GUT in 2004 LMS Moodle was moved to the University Computer Centre. ACSA PG<sup>8</sup> is now located there. In 2005 TeleCAD was awarded as “Best Practice Projects” in ATVN-EU-GP Open Contest<sup>9</sup>.

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<sup>1</sup> <http://www.autodesk.co.uk/adsk/servlet/index?siteID=452932&id=6560940>

<sup>2</sup> <http://blanka.moodle.pl/file.php/1/index.html>

<sup>3</sup> <http://www.dec.pg.gda.pl/pro/leonardo/telecad/>

<sup>4</sup> <http://moodle.pg.gda.pl/>

<sup>5</sup> <http://moodle.org/stats/>

<sup>6</sup> <http://www.emdel.org/modules.php?name=Catalogue>

<sup>7</sup> <http://www.pg.gda.pl/cure/>

<sup>8</sup> <http://www.oi.pg.gda.pl/?kursy;acsa;r>

<sup>9</sup> <http://www.atvn-eu-gp.pl/contest/winners.htm>

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## E-VITA – AN INNOVATIVE AND CREATIVE APPROACH TO KNOWLEDGE SHARING AND TRANSFER IN AN INTERGENERATIONAL SETTING

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*Lucia Pannese, imaginary srl, Italy*

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### Intergenerational Learning and Storytelling

Demographic changes in the European population request innovative concepts and pedagogical models for enhancing effective knowledge sharing and knowledge management. The development of methods for engaging different generations in simultaneous learning processes becomes crucial for today's society. Especially the valuable life-experiences and knowledge of the older generations incorporate great opportunities to be transformed into attractive sources of inspiration and guidance for younger generations. At the same time, both age groups have the feeling of sharing something that is important to them and that the elder ones fear could be lost. This is exactly what Storytelling is about and in fact, much intergenerational learning goes on informally.

### Learning and Serious Games

There are different ways to engage the learner, and the approach always depends on the learning targets of a certain activity. The mere reporting of experiences by a certain individual probably leads to a low retention rate and although it promotes knowledge sharing, it can be applied by others in their own activities and decision processes with some difficulty. Therefore a learning approach is needed that keeps learners actively engaged, where they can express themselves freely, where profound insights for long-term thinking are triggered. Games and the overall activity of playing have been important exercises throughout human history: they engage people and provoke spontaneous behaviours, independently on what context and age group.

### The E-VITA Project, Serious Games Based on Storytelling for Intergenerational Learning

The E-VITA project – European Life Experiences, [www.evita-project.eu](http://www.evita-project.eu) – co-funded by the Education and Culture DG under the Lifelong Learning Programme, aims at developing and testing Serious Games that allow younger generations to “live” stories told by older people. This way the complexity of the past can be experienced directly and understood while playing a game that once used to be a real story. It wants to test and investigate new ways of knowledge sharing and knowledge transfer in an intergenerational setting. In E-VITA the principles of Game-Based-Learning [GBL] and Storytelling are combined for the creation of different serious games focusing on the transfer of life experiences of older people to younger ones.

In this context the E-VITA project promotes and investigates pedagogy-driven innovation by defining new approaches to problem-based and contextualised learning as well as knowledge transfer integrating GBL with intergenerational learning concepts. A set of ‘European cultural games’ about cross-border experiences of older Europeans is being developed, allowing users to experience a past Europe of e.g. strict travelling and migration rules, different economic and monetary systems, uncertainties towards intercultural aspects in an engaging way, promoting self- reflection on the achievements of the European Integration process outside a formal instructional context.

The E-VITA framework for knowledge sharing includes four main concepts: TELL, SHARE, PLAY, LEARN. Stories are collected through an approach based on Communities of Practice and the games are developed there from with participatory design principles.

The European cultural games that are being developed within the scope of the project are a prototype for various opportunities of such an innovative approach for intergenerational, game-based learning and knowledge transfer.

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## E-LEARNING SYSTEMS FOR PERSONS WITH DISABILITIES

*Jolanta Chec, National Institute of Telecommunications, Poland*

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### Features of existing e-learning systems useful for learning process of disabled persons

Modern e-learning systems, by the use of new ICT tools, offer many facilities for e-learning process: learning independently on time and place on self pace – also very useful for disabled people.

They can ensure effective, high quality, creative, individualized learning process for people without disabilities. They consider pedagogical aspects of learning process (especially Kolb's theory) enabling creation of appropriate learning environments in accordance with type of knowledge and learning styles.

E-learning systems, by the use of Artificial Intelligence tools can enable individualized e-learning. Intelligent teaching system and appropriate simulated learning environment were elaborated by me ensuring high quality individualization of e-learning process. Many experiments concerning investigation and optimization of intelligent teaching system performance were carried out in simulated learning environment ensuring trials repetitions from the beginning (impossible in real environment) very useful for full investigations.

Individualization of learning process in e-learning systems can be realized in two ways:

- by the use of node point structure concerning didactical material;
- by the use of learner models in intelligent teaching systems (containing sets of parameters characterizing learners).

Some e-learning systems are developed for disabled persons (described in the paper) such as blind people and deaf people.

### Adaptation of intelligent e-learning systems for disabled persons

Statistics show that the unemployment of disabled persons is a few times higher than unemployment rate of the remaining population. Appropriate education for disabled persons is very important to eliminate education lack. All barriers for disabled persons (technical, legal) concerning learning process and active participation in life should be removed.

E-learning systems, because of their features, can be very helpful for appropriate education of disabled persons. They should be adapted to different kinds of disabilities (e.g. vocal interface for blind persons, videos using sign language for deaf persons). Some solutions of e-learning systems according to different disabilities are made. Such e-learning systems adapted to different disabilities should be based on functions of bodily organs in good health eliminating person disabilities during learning process. The way of adaptation can be used by intelligent e-learning systems.

The information and services offered by Internet should be designed appropriately according to disabled persons' needs. ICT tools offer large benefits for learners with disabilities enabling effective learning process and active participation in the development of their community. Vocal interface and special tools using vocal interface, special printers and keyboards using Braille alphabet can support blind learners. Visual presentations (video presentations using sign language, pictures, animations, text) can support deaf learners.

Elaborated intelligent e-learning system ensures high quality e-learning process of individualized and creative nature but it is not adapted for disabled persons. My new idea is to adapt intelligent e-learning systems (using learner models) for disabled persons' needs (considering their disabilities). This way disabled persons can use the whole functions offered for persons without disabilities by intelligent e-learning systems (enabling high quality creative, individualized learning process for disabled persons). Intelligent e-learning system (developed and examined in simulated environment) can be adapted to disabled persons needs.

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## THE SIMULATION FOR THE STAR RATING OF SOCIAL CARE SERVICES

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### Quality and Performance in Social Care

When people go into residential care in their old age they are at their most vulnerable. To protect them, Governments seek to ensure that care homes are well regulated. More recently the place of incentives has increasingly been recognised.

In the UK the Commission for Social Care Inspection launched a 'Star Rating' assessment of care home quality in 2008, somewhat similar to the ratings found for hotels and restaurants but much more focused on the quality of care experienced by the old person. Each of the 18,000 care homes in the UK is assessed by an Inspector against a given set of criteria.

These developments coincided with work being undertaken under the PROLIX project which is seeking to strengthen the competitive advantage of organisations by speeding the time to competence. PROLIX partners SCIE and *imaginary* quickly recognised that it would be possible to use the highly structured UK system of outcomes and standards to reveal which competencies required attention if a given star rating was to be retained or improved upon. From these considerations the Star Rating Assessment Tool (SRT) was created as a web application based on a simulation engine by *imaginary*.

### The Star Rating Simulation in the PROLIX Framework

PROLIX is a 4-year integrated R&D project co-funded by the European Commission under the 6th Framework Programme Priority 2 "Information Society Technologies". It seeks to align learning with business needs to help organisations respond more quickly to changing business requirements.

The major innovation of SRT has been the explicit linking of regulatory standards with staff competencies. SRT provides care home managers with many opportunities to explore strengths and weaknesses, and, in conjunction with other PROLIX tools, to identify specific training needs in a far more sophisticated way than in the past. Unlike some simulations which abstract from reality, the SRT is 'hard-wired' with the actual standards and assessment criteria of the UK sector, making it a powerful diagnostic tool.

At present e-Learning providers have, in the UK, begun to supply courses and content which meet the need for mandatory training care home staff are obliged to undertake. The SRT, on the other hand, is seen as being likely to generate demands for very specific facets of care training to remedy specific weaknesses.

### The SRT Simulator and Future Learning Developments

The expectation is that the SRT will present training providers with very clearly articulated requirements, some of which will be quite specific and which will lend themselves to the range of new platforms including ambient and mobile. Inevitably employers will increasingly seek 'proof of competence' in specific conditions rather than generic competence that can only be inferred from formal qualifications.

There is clear potential for the SRT to perform at the core of a Personal Learning Environment (PLE), managing an employee's competencies profile whilst matching and locating training content to fill competency gaps and offering these to staff and managers as business needs change and develop. It is due to clear benefits to all stakeholders that the SRT is attracting interest across Europe but in particular its ability to identify priority training needs for improved care quality.

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## SENIORLAB: AN INNOVATIVE, USER-DRIVEN, LIFELONG LEARNING PROJECT BASED ON THE EXPERIENCES OF SENIOR CITIZENS

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### Objective

The objective of *Seniorlab* is to put senior citizens at the centre of the knowledge society, under the belief that they should not have to adapt to new technologies and tools, but rather that these should be adapted to senior citizens' needs, and it should also be taken into account what they can provide to society. *Seniorlab* is, in this context, a social innovation that regards people -senior citizens in this case- as the drivers of social and cultural innovation.

### Methodology

*Seniorlab* uses a project-based learning approach, and also borrows from the Living Lab methodology; members meet twice a week, and receive formative sessions on the technology tools they require for the projects being developed. The 13 members of the team also participate in meetings to follow-up on these projects, discuss and propose new ideas for innovation, and share experiences with other groups and organizations that are interested on this area. Through some of the projects that were carried out, slideshows became family photo albums, and video was used to create a record of the places they have grown and worked in. This in turn meant they not only had to learn how to use new technologies, but also how to do research: how to conduct interviews, how to search for a file, how to document facts. It is essentially a combination of project-based learning and a Living Lab methodology: the users are at the centre of the open innovation process, and are involved at every step of it.

### Results

The project has just reached its first year of life. As of today, *Seniorlab* is a Living Lab community composed of 13 members, who during 2008 have developed a number of innovation, learning and diffusion projects centred on new technologies. *Seniorlab* has also played the role of observatory for innovation projects developed for and by senior citizens.

The activities developed at *Seniorlab* have been focused on the interests and needs of the members themselves; instead of starting with ICT courses, a different approach was taken: through the use of focus groups and observation, the interests and needs of the group were identified, and then it was decided what tools were necessary for the execution of the related projects. The training sessions were done as workshops rather than as formal courses, based on the requirements and feedback of the participants. A lab/meeting area is being set-up, and a blog was created (<http://seniorlab.citalab.tv>); this is maintained by the *Seniorlabers* themselves.

Additional results are the promotion of a techno-social identity among senior citizens, bringing them closer to technology; a high level of enthusiasm and involvement in the project; and providing the participants with a basic knowledge on tools such as blogs, video recording and slideshows. There are also some specific results, related to the projects developed by *Seniorlab*, and which are structured around two main axes: the Memory and history axis, and the Technology axis.

### Future work

So far, the *Seniorlab* experience has been a successful one, and we intend to keep on developing new projects and ideas, always driven by the users themselves. All projects have been proposed as prototypes that can be improved and expanded, either from the content or the technology point of view. Proven methodologies and tools could be applied to new environments, and current projects could be improved and enhanced by using new tools and applications. The project is starting its second year with an expanded group of *Seniorlabers*, including the ones that participated in the first edition and additional members in the coordination team.

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# CELEBRATING THE DIFFERENCE: UNDERSTANDING THE ADVANTAGES OF USING CULTURAL AWARENESS TO EMPOWER INNOVATION IN ONLINE LEARNING COMMUNITIES

*Carolina Suarez, Universidad Autonoma de Guadalajara, Mexico*

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This poster is about the reflections of an online learner demonstrating the importance of celebrating cultural differences as a way to empower innovation in online learning communities.

The facts that I am from Colombia, that I am working at a Mexican university and that I am currently undertaking a Masters from an American university have taught me much about the importance of considering cultural differences when it comes to the learning process and more importantly, to realize how this awareness can help students, faculty and institutions to promote innovation in online communities.

Online students differ greatly depending on the context of their lives. Their identities, behaviours, preferences and life styles are examples of their social backgrounds and the way in which these backgrounds influence their learning preferences. We must always remember that those involved in learning situations belong to a world full of experiences to learn from, and should be given the proper voice and space to share and build knowledge collaboratively.

Cultural awareness does not mean to have students from different nationalities taking classes in a particular online environment where a single culture predominates and all participants try to camouflage their identities in this environment. Cultural awareness in online learning means to be able to listen to, understand and realize that the students have diverse conceptions, beliefs, and needs and that the integration of these conceptions, beliefs, and needs into the online learning experience is vital to the success of these programs. In the same way, innovation does not mean to invent new things only. It also means to look at the same thing considering multiple perspectives, and those perspectives are determined by cultural and social backgrounds that enrich learning experiences by identifying, encouraging and celebrating the differences.

As online learner I have learned to make use of my own cultural and social background to take advantage and maximize my learning experience. Having been born and raised in a Latin American country and undertaking a Masters program in an American university has taught me meaningful lessons. This poster suggests a list of how to empower innovation and shares some lessons learned when celebrating the difference.

## How to empower innovation by celebrating the differences

- Exposure to cultural backgrounds.
- Personal experiences become effective problem solving activities or case studies.
- Support team work and collaborative learning.
- My reality is not yours.
- It is OK to be different.

## Lessons learned by celebrating the differences

- Developing leadership skills by considering the team member's individual backgrounds and cultures.
- Encouraging the differences and promoting the creation of safe online learning environments.
- Moving from a passive to an active educational role, engaging in more profound communication and reflection.
- Developing communication skills, critical thinking skills, a broader global perspective, and being able to share my views with others of different persuasions.
- Being challenged by other's perspectives and feeling motivated to participate in debates.
- Sharing knowledge, values and goals by participating in online communities and learning from multiple perspectives.

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## CREATIVITY AND PROBLEM-BASED LEARNING IN AN MSc HRM PROGRAM

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### Thinking skills, creativity and problem-based learning

In this era of unprecedented breakthroughs in technology and constant change in many aspects of life, educators are challenged more than ever before with the need to develop graduates who will be adaptable in fast-changing environments. Creativity and innovation are becoming the new core competencies of corporations and a company's greatest asset may be its creative capital.

### The need for curriculum innovation

In the light of these developments and on the basis of study run, the School of Management, New Bulgarian University started a project to rationalize an MSc HRM programme at the beginning of 2008, using the technology of blended learning. A Problem-based Creativity Learning approach was used, pertaining to the development of creativity and innovation.

### The study – some findings

The purpose of the research was to address the following two objectives:

- How companies in Bulgaria and business education are dealing with innovation and creativity?
- In what ways business education could develop the creative talent?

The study was undertaken with 45 adult students who have experience and work like HR Managers or HR specialists in different companies in Bulgaria.

Nearly three-quarters of respondents (70 percent) indicated that innovation takes place when management is willing to change the company's business model to capitalize on new ideas. In addition, most of the participants said critical-thinking and problem-solving skills are "very important" for incoming high school graduates' successful job performance, but they rated recently hired high school graduates as deficient in critical thinking.

The results obtained on the second objective vary according to the personalities, capabilities, and interests of individuals, but nevertheless this fact most of the students are very comfortable with unconventional ways of thinking and doing: "We're talking really about the ability to solve important problems, problems that are complex that do not have immediately apparent solutions. The connection between that and innovation is that innovation is the successful adoption of new, useful ideas". "We need a learning environment that nurture our differences and help us in terms of team and collaboration."

### Suggestions for the rationalization of the MSc HRM curriculum

- The curriculum must be concerned with 'employability' including the interrelationship of theory and practice, and the development of business related skills – risk taking, innovation and creativity, change management
- Need to develop a collaborative learning culture within the student cohort
- The use of innovative means of assessment based on reflection, portfolio building and personal plans
- Creating a 'Business Like Culture' throughout the operation of the programme
- Develop opportunities for students to engage in 'real life HRM problems'
- The use of diverse and rich mixture of learning strategies and tools (brainstorming, role plays, real case studies, etc.)
- To provide students with an excellent learning experience that draws on the research and consultancy of SM, NBU using 'Blended Learning'

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## COACH BOT – MODULAR E-COURSE WITH VIRTUAL COACH TOOL SUPPORT

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The COACH BOT project aims at designing and testing an innovative e-learning methodology for adult education that combines the Conversational Agent Technology (chatterbot or chatbot) with an ad hoc designed modular learning path. The pilot course addresses to a direct target group of home health care professionals (e.g. medical staff, nurses, doctors, etc). The long term target group is the health care sector which is a complicated system that demands extensive resources and consists of a set of integrated services and inter-collaborative health teams. Professions in this sector require a broad skills base; however, despite increasing training demands, the current training system is too slow and inefficient to keep up to date with new changes. IT based learning, therefore, can help these professionals develop new skills through a flexible training approach. Unlike most web-based settings, the COACH BOT project provides learners with ongoing assistance and feedback that can help prevent them from feeling isolated during their learning process and keep them motivated.

The project's innovation consists of the development of a collaborative e-learning environment featuring a "chatbot" or "Virtual Coach", who interacts with users through a human-like interface, in order to enhance learning and keep participants engaged. The "Virtual Coach" acts as a teacher, coach and peer assistant who supports learners "individually" during the modular e-course by providing in-depth information, assessment, case studies, role playing and technical support. The "Virtual Coach" interviews each learner in order to create a student profile which will constitute his/her own personal training path and then leads and encourages him/her throughout the training process through constant interaction.

The e-course curriculum is based on a personalised approach allowing learners to benefit from a training path that is designed according to their own specific needs, knowledge and skill requirements, where learners can choose to focus on contents that are most relevant to their profession. Training topics include medical and psychological issues, national and European health laws and social and ethical aspects of home health care assistance.

The project work plan is developed according to an analysis of European health care system's training needs and best practices concerning current e-learning methodologies used for medical professional training. Research results will provide a basis for the design of the COACH BOT e-course curriculum, didactic model and methodology, including the e-learning platform and the "Virtual Coach" engine. A group of home health care professionals will be selected to test and measure the effective benefits of the proposed methodology during the experimentation phase. The pilot e-course will be delivered in five countries: Italy, Denmark, United Kingdom, Slovenia and Romania. The experimentation methodology will consist of two test groups: the experimental group will carry out the e-course with the "Virtual Coach", while the control group will follow the e-course without the "Virtual Coach". These groups will provide meaningful data to analyze the effectiveness of virtual coaching. Moreover, dissemination and exploitation activities will be planned to promote the main project results, methodology and the pilot e-course to different health sectors on a wide scale.

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## INVESTIGATING THE PATTERNS OF INTERACTIONS IN THE CALIBRATE PROJECT THE USE OF SOCIAL NETWORK ANALYSIS

*Helga Dorner, Central European University and University of Szeged, Hungary*

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CALIBRATE (<http://calibrate.eun.org>, 2005-2008) was a European project supported by the Information Society Technologies (IST) Programme in which eight Ministries of Education, linked their national digital learning content repositories, investigated new intelligent search functions like curriculum mapping of resources and established a new multicultural and multilingual open source web community for finding, authoring and sharing learning resources. Work on the Learning Resource Exchange (LRE) involved the syndication of national learning resource repositories, collaborative evaluation of learning objects and resources retrieved from the repository, upload of adapted, modified or individually developed learning resources by teachers and the formation of knowledge building communities (Kárpáti & Dorner, to appear).

In Hungary in the first (n=23) and second (n=20) iteration of the project the Fle3 and the LeMill virtual learning environments were used since the participating teachers were located in several different regions of the country. Thus, project work involved regular online collaboration.

The collaborative processes were facilitated by e-moderators (Salmon, 2000) – one in each of the domain-specific groups. They provided *professional mentoring* i.e. scaffolding the knowledge creation of teachers by peers, e-moderators in an e-learning environment to support innovative practices. The *Mentored Innovation Model* – applied in the Hungarian in-service teacher community – relied on the three basic constituents of the online community of inquiry: cognitive, social and teaching presence (Garrison, Anderson and Archer, 2000).

Our research focused on the online interactions that evolved in the course of collaboration. Both quantitative and qualitative research tools were applied: quantitative analysis of log file data and qualitative analysis of the interaction at the macro- and micro-level. In the case of the macro-level analysis we utilised Social Network Analysis, since as Nurmela, Lehtinen & Palonen (1999) claim computer system log files can be used to investigate aspects of social network and interaction. This method may help to understand and identify (and make visible) the participatory patterns and relationships that change in the complex dynamics of online work. As Wassermann & Faust (1997) put it, using SNA, the social environment can be mapped with relational data. For the study of micro-level processes we used content analysis (Anderson et al, 2001; Rourke et al, 1999; Zhu, 1998, 2006).

We managed to identify those group members who participated in the collaborations, detected the most/least active group members, and characterised the communities of in-service teachers with relational data such as density and in-/out-degree centrality values. With the help of data sheets and sociograms we made visible the interaction patterns with special focus on the position of the e-moderators. The results will be utilised in the next phase of data analyses: studying potential relations between the pattern (shape) of interaction threads typical of a group and the results of the content analysis i.e. cognitive, social and teaching presence values, in each group.

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## ANALYSING COLLABORATIVE GROUPWORK IN A SOCIAL NETWORK FOR INTERCULTURAL COLLABORATION BETWEEN JAPANESE AND HUNGARIAN UNIVERSITY STUDENTS WITH NETWORK ANALYSIS METHODS

*Pal Molnar, Karoli Gaspar University and University of Szeged, Hungary*

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We started a social network and social based collaboration tools supported intercultural collaboration course in the spring of 2008 between Japanese and Hungarian university students who studied Japanese Culture Mixed study groups were formed, including 4-6 Japanese and Hungarian students. These groups had to choose a common topic of interest and prepare an explanatory presentation for it the rest of the class at the end of the course. The students interacted with each other through various forms of collaboration and produced shared objects, for example, communication plans, questionnaires, presentations and final essays about their findings. At the end of the semester, the groups presented the created presentations to each others. We used a discussion mapping tool, called MapIt (an experimental application of the Knowledge-Practice Laboratory – KP-Lab project, cf. [www.kp-lab.org](http://www.kp-lab.org)) to capture and visualize brainstorming and problem solving sessions that were held in a discussion format. This tool is a virtual discussion forum, where students as members can start various topics, interact to each other by reflecting on the contribution of another participant and could view the whole discussion in the form of a shared visualisation: a discussion map.

Online social networks are popular amongst young students, who use it on their everyday life and learning. They are the so called Millenials, or Net generation, Generation Y. They are sociable, optimistic, talented, well-educated, collaborative, open-minded and achievement-oriented. Also, they are well-connected, like work with friends and classmates. They seek learning opportunities and chances to interact with friends and classmates, so educators should assign projects that allow them to work and develop among a group of teammates. They respect leaders, so a mentoring program may succeed well with this generation, and they appreciate extensive training and development opportunities. They are growing up in the age of globalism, communicate pen pals through the internet and enjoy the various online services and social networks. These networks have become the main place of interactions, knowledge seeking and learning of this generation. For this generation, the online learning and work is a lifestyle, where social networks are the place of interaction. Our Net Generation students soon enter the workforce where they will be obliged to use online and collaborative tools, so we try to prepare them to correspond to this challenge. We planned and manage our problem and project based intercultural collaborative course for this generation, in order to enable them to learn and communicate in a collaborative environment, where tools and methods are based on teamwork, shared goals and fun.

At the planning stage of the course, we preferred online social network for the main interaction between Japanese and Hungarian students. We chose the virtual communication and content sharing environment called Facebook for this project, because this social network is one of the biggest, it is localised both language, has intuitive and easy to use user interface and design, and has a lot of communication features. For the team work we could use groups, forums as well as picture, video and link sharing utilities. For collaborative writing, surveying, presentation building, we used other open services – mainly Google offered tools –, and we linked this created object to the created Facebook group, where students could access, comment, discuss these products.

In the social networks we could perform networked and closed, walled-garden (small)group learning also, and in the groups and networks, which function as learning environments, we could measure various interactions and connections. From the collected information from the participants, about their connections, friends, classmates, likes, interactions, communications, their created contents, etc. We could analyse these data with the use of Social Network Analysis (Moreno, 1934/78; Scott, 2000; Wasserman and Faust, 1994) that visualise social relationships, communications and various interactions through matrixes and graphs. For this study, we collected, and analysed this type of connected and relational information of students and their teams, measured the forming and changing of the small learning groups, and interactions through the project and created visual relational graphs where we could see the interactions and relations of the groups and group members, the key persons and those in bridge roles, etc. Through this type of analysis, we could improve our project work and could manage the groups and students more efficiently.

Our project's research goal was to find appropriate pedagogical methods and tools for collaborative, knowledge building, task and interaction centred learning with small networked groups and students in online social networks supported by a blended learning environment, evaluate and measure the interactions, connections and contents of this learning communities and give feedback about the findings.

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## MULTIDISCIPLINARY PROGRAM E-LEARNING OF AGRICULTURE IN POLAND: CHARACTERISTIC OF METHOD AND KIND OF TESTS

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Existing programs of learning from range of natural science that was made in Poland consist of only selected processes in range of specific direction of study. In natural ways, directions of studies like informatics was first carefully worked out. Specificity of modern agriculture instructing puts greatest demand for authors of objects at agricultural universities, where tasks for student are not only theoretical knowledge but also practical, in direct contact with nature.

Agriculture is professional made of objects for e.g. Cultivation of Agrocenosis, Plant Breeding, etc. and it is possible to describe it theoretically when audience got essential minimum of practical knowledge, and also is able to control scientist that are directly linked with group of basic sciences like mathematics, statistics or chemistry.

In year 2006 group of Polish universities has processed first program for education on distance learning in direction agriculture and this Project was co-sponsored by European Union within the confines of sector operation program "Development of Human Resources 2004-2006", priority "Human Resources Learning and Development".

Main target of Project was creating of complex program of learning namely connection e-learning with traditional learning. Group was made of: agricultural university in Wroclaw (main leader of Project), Academy of Humanities and Economics (leader project of e-learning), agricultural universities in Cracow, Lublin, Szczecin, Warsaw University of Live Sciences, University of Warmia and Mazury in Olsztyn.

In frames of the Project, educational materials for 30 objects were produced: Agrobiotechnology, Agroecology and Environmental Protection, Agrophysics, Agrometeorology, Instrumental Analysis, Biochemistry, Botany, Chemistry, Rural Chemistry, Economy, Plant Physiology, Animal Physiology, Genetics, Pedology, History of Economy, General Plant Cultivation and Breeding, Informatics, Forming of Environment, Methods of Agricultural Research, Microbiology, Dendrology and Plant Protection, Herbology, Food Preservation, Mathematical and Statistics, Detailed Cultivation of Plant, Agricultural Techniques, Technologies of Plant Production, Modern Social and Economic Doctrines, Management and Marketing, Food and Farming of Animals – so it is a whole complex of basic professional objects coherent with agriculture.

Materials for each course are free on <http://www.e-rolnictwo.edu.pl/>. They consist, divided on chapters materials of course that include introduction to particular part of material, interactive tests and exercises and list of literature, useful links to sites with additional materials, recapitulation in the form of list of question. At the end of each course last test and exercise are placed that allow an independent verification of earned knowledge.

Choice of tests and methods for independent learning and verification is important novelty in comparison to traditional method of university education. It consist of such forms like single-time tests and multiple choice, refilling from list of elements or inscription independently, exercises of type joint elements, interactive exercises with multimedia elements.

Elaboration of professional object is interesting aspect of Project. Till now they were not processed, or they existed in incomplete dimension. It is worth of discussion if such approach for instructing professional theoretical contents is sufficing and if it exhaust methods of its instructing already (what with practical knowledge? How realize specificity of typical "field exercise" program e.g. Agrobiology, grassland).

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## DEVELOPMENT OF INNOVATIVE TECHNOLOGY-FOCUSED ADULT EDUCATION

*Vida Motekaityte, Aleksandras Targamadze, Kaunas University of Technology, Lithuania*

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As a force contributing to social and economic development e-learning is fast becoming an accepted and essential part of the mainstream of educational systems with particular emphasis for the latter. This growth has been stimulated in part by the interest among educators and trainers in the use of new, internet based, interactive and multimedia technologies, and also by the recognition that traditional ways of organizing education need to be reinforced by innovative methods. E-learning is a very actual proposal for adults, as the rhythm of work and life increases together with requirements and challenges from employers. When there are wide technological possibilities more and more adults seek to continue their education or decide to finish secondary education if some decades ago they did not have possibilities to do that or were made to leave the school or the country. Therefore, the development of adult education becomes a very important part of continuous education and in general education system.

Despite the facts that there is a wide niche, interests and the demand to develop continuous education through distance or e-learning, educators in general and especially adult educators face the problems, related with a lack of methodical material, methodological material on how to use these technologies, provide and organize e-learning, create e-learning courses, choose the most suitable tools and e-learning environment for adult education as well as what are advantages and disadvantages of e-learning environments and tools. Also it is important to notice that because of such an abundance of technologies in the market, teachers feel uncertain of what suits best of all, what are differences between these suggestions, and they experience a fear to choose, start and develop e-learning process. In addition to this there are many courses for teachers or teacher trainers who are dealing with young students, but still there is a lack of courses which propose additional studies for teachers teaching adults. Teachers and trainers need to be capable of contributing to the successful launch of adult education as lifelong learners.

The objectives of education and training systems in Europe focus on the use of information communication technologies (ICT) and the quality of ICT teaching in particular. Innovative ICT tools have become increasingly important in adult education and online teaching. Through the effective use of ICT adults could access online learning resources that could help them to create personalized educational pathways. As far as the education and training systems are concerned, the ability to respond to the rapid development and the need to be competitive will continue to play an important role. In addition, flexibility and knowledge about ICT is needed for adult educators to acquire ICT skills throughout their work.

Analyzing the situation in adult education and teacher training, observing similar problems and needs in different European countries, the idea of a project was developed, evolved and spread between 5 project partners countries (Lithuania, Italy, Poland, Greece, Spain) till the project "Tech-Connected Teacher" was approved in 2008, within the framework of the Lifelong Learning Sectoral Programme Grundtvig. This multilateral project initiates and encourages the development of innovative technology-focused adult education.

This article deals with the development of adult education, which is based on innovative technologies and their use for teaching, answering the questions how adult educators can make adult teaching more effective through innovative technologies, what are the problems and fears that adult educators meet, how the best practice examples in European level could be useful in adults education and teachers qualification improvement, identifies the needs not covered in adult education looking through European countries experience and presents multilateral project "Tech-Connected Teacher".

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# DISTANCE LEARNING AS A TOOL, PROVIDING THE VALUE OF LATVIA'S HUMAN CAPITAL IN LABOUR MARKET OF EUROPE

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## Knowledgeability and Competency as a Tool for Competitiveness of Inhabitants of Latvia in the European Labour Market

Latvia, being a part of the union, supported the idea of free movement of labour within the EU and thousands of its citizens have used this opportunity to leave and work abroad. Over the last years, tens of thousands of inhabitants of Latvia have left Latvia to search for a better life in Ireland and other countries of European Union. Over there, they would work long hours as farm workers, supermarket cashiers or cleaners. Their income would be below-average by EU standards but much more than what they would have earned in Latvia.

The main questions, that authors want to stress in this article, are:

- Why inhabitants of Latvia work in jobs that “locals would not take”?
- How to change this situation?
- How to organize their study process and how to widen their competencies?
- How to make the process of repatriation or integration into EU community more easily for these people?

## Distance Learning Study Support System and its Management Model – Case Study: College of Business Administration, Latvia

One of the most actual problems in our society is perfection of adult competencies (competencies – the necessary knowledge, professional experience, know-how in a particular area and skills to use the appropriate experience in the particular situation).

In order to develop adult competencies and provide life-wide and life-long perfection of these competencies in a way that everybody's individual needs are fully met, it is necessary to change the contents, forms and methods of education as well as the concepts and principles of the management of education. Distance learning would suit this purpose well, because it ensures perfection of the actual adult competencies, allows to combine studies with work and other practical activities by using a relevant study support system that meets the individual needs.

In the article the authors explain how College of Business Administration (This was the first (and until now – the only one) higher educational institution in Latvia that a year ago started activities according inhabitants of our country in Europe) realize its aim to give education and to wide competencies of inhabitants of Latvia all over European Union. The model of Distance education support system and its management is described there.

## Conclusions

- The main aim of the College is to offer high quality education for our citizens in Europe. But there is the additional voluntary mission – to connect Latvia's citizens in Europe, to make less gap between homeland and residence.
- Of course the question – would Latvian migrants move back home – is very important. A lot of Latvians suggest, that there is no point in making strategies on how Latvia could get its people back. The state just needs to solve the problems at home and its citizens will return. College of Business administration tries to make such strategy, helping to receive the status of high qualified specialists for Latvia' citizens as guest workers or return home as competitive employees in Latvia's labour market.

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## IMPACT OF CMS SYSTEMS ON THE DEVELOPMENT OF EDUCATIONAL INSTITUTIONS

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Zagreb School of Economics and Management (ZSEM) was established in 2002. From the very beginning it was able to take advantage of all the benefits offered by the introduction of new technologies in the process of education. This primarily means the introduction of Learning Management System (LMS) and Content Management System (CMS). ZSEM is the one and only higher education institution in Croatia that systematically uses e-learning in teaching – e-learning is the commitment of all our professors and teachers. Parallel with the development of its LMS system we have developed our CMS. In this paper we describe parts of our CMS system, as the system that is developed and how much is effective in education. Since the system is modular easy it is built and continues to develop. Intensive use of new technologies through the LMS and CMS are preparing our students for life-long learning (LLL).

### CMS System at Zagreb School of Economics and Management

Zagreb School of Economics and Management is currently using Joomla and Mambo CMS systems. Joomla is one of the easiest and most effective ways to create a CMS based web site. This means that there is a very simple possibility of importing, editing, organization and publication of content on the web site. With all the basic functions that Joomla provides us, we have the Joomla upgrades possibility for various components that match the requirements of school by individual pages. Here we talk about the various marketing components such as the creation of various surveys, the various modules with banners and other promotional materials, download component for the documents transmission, special components for the individual modules protection (user login access using a password and user name).

### CMS Management in the Form of Education

Using CMS systems in the form of education can be applied to several models, and each of them is extremely important to be minimized through the time limits for finding relevant information. Also, through savings of time we come to saving funds. Current Internet system is the smallest investment item in the annual investment portfolio, but on the other side has a strong impact on the provision of information and education in general.

### CMS Use among ZSEM Students

CMS provides large amount of information to students. A smaller research is done on the basis of ZSEM web site statistics. Since the students have a lot of good basic computer skills, and are equipped with modern technologies such as Internet access via mobile phones, an essential item is to have CMS which can be easily loaded. An example from the statistics is that the time period of one month gained even 546 visits over the GPRS network, of which 46 were using the iPhone operating system. If we consider the fact that the iPhone officially came to our market after 7<sup>th</sup> November 2008, it tells us that the students follow the current technological trends. Thus, information to students with the shortest possible time load must be available in a few seconds.

### Conclusion

Unlike the early education system which was mainly based on lectures in classrooms or simple scripts, modern technology is turning to multimedia content. Such content makes everything much more interesting and accessible to a wide range of users, which in this case are students. New ways of learning are entirely oriented towards multimedia. With certainty is to say that the potential which has a new aspect of the education system through e-learning is so large that only time will show how and in which ways will it be able to take advantage.

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# E-DUCATION: 2020 PERSPECTIVE

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## Introduction

In the coming decade multimedia, mobile technologies and social software will transform the future of education. Some important technological trends are observed on the market. The power of processors, capacities of memories and batteries are increasing while their sizes are decreasing. On the other hand costs of majority core elements are decreasing. There is a trend to standardize file formats as well as operating systems. Moreover all mobile devices communicate better with each other. M-learning is fully anywhere, anytime and always. It produces best results as a part of blended learning used not only for teaching but also for creating, communicating and collaborating. On the other hand mobile technologies used to communicate help to change radically learning and working practices. The current generation of young people could reinvent the workplace and even society they live in during the coming decade. The only thing we can do is to get used to it.

## Trends in hardware changes and multimedia revolution

In the coming decade some well documented actual trends will be continued:

- Increase in the power of the processor, memory and battery and decrease of the physical size.
- Decrease of the costs of many core ingredients (screens, batteries, memory).
- Standardisation of operating systems, as well as file formats and the media we use for transferring.
- Better communication of mobile devices with one another in several different ways.

Multimedia and multimedia revolution seems to be a big challenge for educators.

## Software changes

In 2001 the burst of the dot-com bubble created a turning point for the web. As it is believed the concept of the term Web 2.0 was started by a conference brainstorming between O'Reilly and MediaLive International, but the seeds of what is now generally accepted as the read/write or shared content nature of Web 2.0 appeared in 1980 in Tim Berners-Lee's prototype web software. Idea of sharing concepts was started by Ward Cunningham who wrote the first wiki in 1994-5 and first weblogs were created in 1997. Change from Web 1.0 to 2.0 can be summarised by a simple statement: in first version few content authors provided content for a wide audience of relatively passive readers while in second version users of the web use the web as a platform to generate, re-purpose, and consume shared content so Web also becomes a platform for so called social software that enables groups of users to socialise, collaborate, and work with each other. Summarising one can say that concept of Web 2.0 does not have a strict boundary but rather a gravitation core.

The term social software was for the first time used six years ago and is attributed to Clay Shirky. He defined social software as "software that supports group interaction". There are some key attributes of social software related to education:

- Delivers communication between groups.
- Enables communication between many people.
- Provides gathering and sharing resources.
- Delivers collaborative collecting and indexing of information.
- Allows syndication and assists personalisation of priorities.
- Has new tools for knowledge aggregation and creation of new knowledge.
- Delivers many platforms as is appropriate to the creator, recipient and context.

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## EXPLORE PARTNERSHIP BUILDING, NETWORKING AND COLLABORATION OPPORTUNITIES USING “E-SENIOR” IN MAGAZINEFACTORY

*Anna Grabowska, PRO-MED Co Ltd., Poland, Rick Swindell, Griffith University, U3A Online, Australia*

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### Introducing MagazineFactory

MagazineFactory<sup>1</sup> (based on the original product called Tidningsfabriken) is a popular and versatile concept for developing web magazines for various purposes and contexts. MagazineFactory is a publishing tool which provides the teachers and the pupils with an opportunity to work as editorial staff in class and to publish web magazines. The service is maintained by the Finnish National Board of Education, and it is available as part of the web services of the National Board of Education.

### Introducing Lifelong Learning Grundtvig Partnership Programme

The Grundtvig programme focuses on the teaching and study needs of those in adult education and alternative education streams, as well as the institutions and organisations delivering these services. Supporting lifelong learning and mobility in this way also helps address Europe’s ageing population problem.

Launched in 2000 and now part of the overarching Lifelong Learning Programme, Grundtvig aims to provide adults with ways to improve their knowledge and skills, keeping them mentally fit and potentially more employable. It not only covers learners in adult education, but also the teachers, trainers, education staff and facilities that provide these services. These include relevant associations, counselling organisations, information services, policy-making bodies and others involved in lifelong learning and adult education at local, regional and national levels, such as NGOs, enterprises, voluntary groups and research centres. One of the specific aims of Grundtvig is supporting innovative ICT-based educational content, services and practices.

### What Can We Share Up Till Now? (This is an Online Demonstration)<sup>2</sup>

The idea of connecting seniors through the online e-Senior Magazine occurred in 2008 during the EDEN Conference in Lisbon. There, a workshop called “Collaborative Learning and User Generated Content Creation with The Multilingual MagazineFactory – An Example of a Social Software, Dynamic Content Creation and Mashup All Wrapped Up in a Single Tool”, was presented by Christian Komonen, Executive Producer of MagazineFactory.<sup>3</sup>

Started from “A Grandparent’s Gift” written by Patricia Porter we now have several items promoting Grundtvig Partnerships and ongoing projects<sup>4</sup>. We will also address the question “Can we work cooperatively in cyberspace with the University of the Third Age On Line<sup>5</sup> in Poland<sup>6</sup>?”

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<sup>1</sup> <http://magazinefactory.edu.fi/>

<sup>2</sup> [http://magazinefactory.edu.fi/magazines/e\\_senior/index.php?str=40](http://magazinefactory.edu.fi/magazines/e_senior/index.php?str=40)

<sup>3</sup> <http://www.eden-online.org/eden.php?menuId=402&contentId=721>

<sup>4</sup> <http://blanka.moodle.pl/course/category.php?id=7>

<sup>5</sup> <http://www.u3aonline.org.au>

<sup>6</sup> <http://klubseniorapg.blog.onet.pl/>

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# InterACTEd: AN INTERACTIVE ANNOTATION AND COLLABORATION TOOL FOR TIME BASED MEDIA

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## Short Description

InterACTEd is an interactive annotation and collaboration tool for time based media. It allows students from different programmes or institutions to share their comments and reflections on prescribed time based learning objects. InterACTEd is a flash based application which can be deployed from within a VLE.

## Summary of Novel Characteristics

InterACTEd draws on e-learning concepts from work undertaken in the University of Manchester, UK and the Technische Universitaet Darmstadt, Germany and the use of software such as Camtasia and Lectornity for educational purposes. Camtasia and Lectornity allow the recording and distribution of time based media for asynchronous viewing. The output of applications of this form predicate a mainly passive student engagement with the educational content, i.e. the student watches the presentation and may write down comment using a different medium unattached to the provided stimuli. The web-based tool eMargo offers an opportunity to integrate students' comments and discussion via a digital margin (Zentgraf C, Lampe, A, Goeller, S, 2006) but only for text based resources. Projects such as 'The Digital Lecture Hall' provide technological support for staff presenting in a traditional teacher centered format and for the distribution of recording of presentations undertaken in traditional lecture rooms (Baer, H; Haeußge, G; Roeßling, G, 2007). CREW (Daw, M; Hall, A et al, 2007) allows for annotation of video based presentations and provides search and metadata capacity across multiple research events.

InterACTEd moves educational time based digital resources from a passive environment to an interactive, reflective and collaborative environment by allowing students to make personal annotations against time based media. It adapts the concepts of CREW to apply to the virtual learning environments used in HE, moving time based resources from passive/reflective to interactive/reflective/collaborative/communal.

InterACTEd in essence provides the capacity for connected time based learning objects, deployable within a VLE, by allowing students separated by time and distance to comment within time based media and to share the comments of others. In a digitized sequenced talking head/slide presentation, students from different locations and at different times can access not only the presentation but also the thoughts and comments of other students at the point in the presentation that they were made.

This demonstration will explore the functionality of CREW and eMargo, describe the synthesis concepts, the emergence of InterACTEd and InterACTEd's place within Virtual Learning Environments. Due to its architecture InterACTEd provides the facility for a learning community to be extended to student groups accessing different programmes of study within different institutions but sharing the same learning object. Therefore InterACTEd allows students to collaboratively develop organic learning resources.

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## NEW TECHNOLOGIES IN SCIENCE TEACHING: DEVELOPING AN ONLINE BEGINNER'S GUIDE

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With the introduction of new technologies to schools and their potential impact on pedagogy, and pedagogical innovation, there is value in attempting to ensure equity of opportunity to experience and develop the potential affordances of such technologies to trainee teachers during their initial education and training (ITET). In the University of Cambridge ITET Partnership, there are centres of expertise in using new technologies, although these are usually limited to enthusiastic and technically competent individual mentors in particular schools.

We used funding from the Partnership Development Schools programme (Training and Development Agency for Schools, UK) to support work on five main technologies: podcasting, mobile learning, digital video, games and consoles, and using a wiki. For each of the main technologies, we enabled a technically competent school mentor and trainee to develop a web-based 'user guide' to exemplify how such technologies can be used in learning, and in particular to support trainee teachers' developing use of, and innovation with, the technologies. The guide was to be aimed at beginners, for whom adoption of such technology was a 'step too far', and was intended to have both a technical and pedagogical focus. It is made available for free on the Internet.

We are unaware of any existing web-based guide, which acts as a one-stop-shop for teachers who are starting to work with new technologies. The guide is written collaboratively by participating teachers and university lecturers, drawing on the views of teachers and pupils, but contextualised within the relevant published literature. The views and ideas of participating teachers and pupils are integral to the guide, making it an authentic, pragmatic and realistic introduction to using new technologies to facilitate learning in the classroom. Rather than being constraining, the guide facilitates a teacher in working with new technologies, but deliberately avoids 'overcrowding' them with highly prescriptive activities. The primary aim of the guide is to provide a teacher with adequate skills, and some understanding of the ways in which the technologies may help in learning. Its secondary aim is to enable the teacher to recognise the potential benefits of the technologies within their own classrooms, and develop their own innovative approaches in response.

We expect to demonstrate the user guide by introducing conference participants to one of the technologies within the guide, and in so doing, demonstrate the main features of the user guide itself. For each technology, we present an introduction to the technology, an identification of the pedagogical affordances reported in the literature, a practical and functional guide to setting up the technology, initial ideas and activities to exemplify how novice users can exploit such affordances, and routes to further classroom ideas.

Use of new technologies in teaching and learning is innovative, and itself provides scope for innovation. The guide provides enough information to its audience to enable them to exploit innovative hardware (such as games and consoles) and approaches (such as wikis and podcasting) in teaching and learning. Enabling participating teachers to experiment with, and to innovate with such technologies was at the heart of our project. The approach taken by the guide is deliberately designed not to be prescriptive and controlling. It targets early career teachers, who may be more open to innovation. By targeting their more experienced school mentors, it also encourages mentors to innovate within their own practice. Such developments between trainees and mentors, working within a school setting, are expected to act as seeds for further innovation across departments within the school.

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# RAPID E-LEARNING TOOLS IN ACADEMIC PRACTICE

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## High Costs of e-Learning and Rapid e-Learning

Traditional e-Learning is expensive as mentioned by Elisabeth West:

*According to The eLearning Guild's 2006 Rapid e-Learning Development Research Report, demand for rapid e-Learning solutions has increased from 70 percent in 2005 to a whopping 82 percent among the companies surveyed for the report. And it's easy to see why. Recent industry estimates put traditional e-Learning development costs anywhere from \$5,000 to \$50,000 per hour of learning. Much of this cost is due to the number of job functions required to develop customized programming for such courses.*

According to Bill Brandon Whitepaper the term Rapid e-Learning can be understood in four different ways:

1. Fast and perhaps cheap development of e-Learning applications (materials)
2. Methods that increase the speed at which people learn
3. Technologies that speed up the connection between Subject Matter Expert and learner
4. Services that enable organizations to quickly add e-Learning offerings to their online curriculum

Demonstration will be concentrated on rapid and cheap development of materials which on the other hand due to their multimedia character increase the speed at which people learn.

## Multimedia Podcasting

The term podcasting is a blend of two words: "iPod" and "broadcast" but it can also be treated as acronym which stands for "Personal On Demand broadcast". There are different types of podcasting: slidecasting, screencasting, boardcasting, audiocasting and videocasting. Demonstration will be concentrated on slidecasting, screencasting and audiocasting.

- **Slidecasting** – Slides prepared in Power Point and stored in PPT or PPS format can be only downloaded as the whole file, which is in many cases time consuming. Such files can be easily transformed to SWF format suitable for streaming or progressive streaming. This operation can be performed by specialised network services like slideshare.net or authorstream.com – one should only upload appropriate Power Point File. Alternative method requires specialised software like authorPOINT Lite.
- **Screencasting** – Software animations belong to the cheapest and fastest tools used in different computer courses. There are many approaches how to teach someone how to use an application. In the simplest illustrative approach training attempts to illustrate each screen and describe each task which is in many cases hardly possible. An alternative is exploration approach in which during training user can be asked to look at various functions. Software animations belong to the cheapest and fastest tools used in different computer courses. Such materials also in SWF format can be prepared by means of specialized software like Wink or CamStudio.
- **Audiocasting** – Audiocasts can be easily distributed in the network by means of services like MyPodcast.

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## SIMPLIFYING GRADING AND IMPROVING STUDENT PERFORMANCE AND PERCEPTIONS WITH RUBRICS

*Vicki Galloway Harsh, Colorado Community Colleges Online/Pearson eCollege, United States of America*

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### Rubrics facilitate even-handed assessment

Rubrics facilitate even-handed assessment and model both the project planning and the review/assessment processes that the student will encounter in the workplace. Assessing via rubrics promotes a learning atmosphere in which assessment is fair and transparent to the students, and reflects a movement toward authentic (product based) assessment.

Rubrics have been in use for quite some time now in the U.S. K-12 education community, but this best practice tool has been a bit slow to catch on in Higher Education. A wider acceptance of the tenants of authentic assessment as encouraged by educators and innovators such as Grant Wiggins and Jonathan Mueller, however, has brought with it recognition that rubrics are a great way to facilitate valid measurement of learning in both the formative and summative stages of a learning task.

For students, rubrics are first and foremost a definition of faculty expectations. They also benefit student learning when used in the self-assessment process. Rubrics enhance instructor communication with the students. Rubric use improves efficiency in grading and help to document interactions with a student around the requirements of an assignment.

After this session participants will be able to:

- Identify basic types of rubrics.
- Incorporate rubrics into your assessment strategy.
- Find or create rubrics online using rubrics-generation sites and repositories.

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## ENHANCING LEARNING OPPORTUNITIES FOR VALUATION STUDENTS USING MULTIMEDIA

*Nikki Bulteel, Sarah Slevin, The College of Estate Management, United Kingdom*

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The College of Estate Management is a UK based institution delivering distance learning courses worldwide to the property and construction professions. For the property professional valuation is a fundamental competence to be developed by practitioners. Traditionally this has been a passive learning experience of reading print based explanations of procedure and illustrative examples. This approach has increasingly failed to engage students and a more active and interactive method of teaching has been developed. This innovative project was initiated to 'step outside the box' and present learning materials which require the student to become actively involved in understanding and reflecting upon the subject of valuation using contextualised and real life examples.

This workshop takes the participants along the student's journey through the revised module demonstrating how alternative media have been incorporated within the resource with which the student can engage and interact. Participants will engage with some of this material and undertake some of the learning activities. The following delivery mechanisms are demonstrated:

- Text (online and paper based) provide good reference and revision material. The Module Guide underpins this new delivery and guides the student through this new style of learning. For reference and revision purposes, a Glossary of key terms is available.
- Podcasts provide a personal connection with the module tutor for the international learner. This is especially important when there unlikely to be any opportunity for the learner to meet with either the tutor or fellow students.
- E-learning presentations form the core study material. The workshop illustrates (a) the functionality of the resource and (b) the user tools which provide students with alternative learning approaches and these include approaches to suit those students with special educational needs
- Recorded video interviews with practicing surveyors providing immediately relevant knowledge and information on critical themes.
- Audio PowerPoint presentations providing easy to follow explanations and illustrations of correct approaches in valuation work.
- Online interactive activities within the e-learning presentations enable the student to put into practice a concept or topic which has just been studied. These also provide an opportunity to consider the local or international variances of that concept or topic relevant to their own location.

Evidence from student interviews and questionnaires indicate that a deeper understanding of these valuation methodologies is gained when students put into practice the topics as they are studied. These detailed learning activities thus follow on the e-learning presentations for each method which are saved in an electronic portfolio for future reference. Various examples are given in the workshop including:

- Online self-assessment quizzes which assist the learners in establishing their understanding of a topic and help identify gaps in their knowledge. Immediate feedback is given along with guidance on correct and incorrect answers.
- Interactive spreadsheets – these enable students to apply appropriate valuation formats using given data and appreciate the consequences of a change in market conditions.

The module places great emphasis on collaborative learning to ensure a deeper understanding of the topics studied. Thus each unit of the module is given a dedicated online discussion forum where students can interact with each other, receive guidance from the tutor and discuss the outcomes from each learning activity.

The workshop concludes, as does the students' experience, with the opportunity to re-visit and replay any part of the e-learning presentations. There is also the opportunity to discuss preliminary evaluations of the project.

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## T3 – TRAY TRAINING TEST: LEARNING BY INTERACTING WITH A QUIZ PLATFORM

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T3, Try Training Test, is a software application to create different interactive exercises to learn content, also in a multimedia format, with a questions, answers and feedback method. T3 is an online platform which allows managing and assessing examinations, exercises and surveys.

Thanks to the experience gained in recent years by Centro METID, we became aware of how, within e-learning paths, quizzes and tests are the most used tools, because interactive and "fast" tools, which allow users directly to test the level of preparation. The platform T3 (Try Training Test) was specifically developed as tool to manage innovative critical activities, such as learning games, and allowing to integrate multimedia elements and formulas in LaTeX in questions, possible answers and feedback, offers the opportunity to try new ways to convey complex content. T3, Try Training Test, is an online platform to learn content through an innovative quiz-based method.

T3 consists of:

- an **authoring system** that is the administration part of platform to create questions and quizzes. The system has a standard interface, changeable in look & feel when it is embedded in external platforms;
- a **delivery and tracking tool**, that is a via web delivery tool that allows students to receive a quiz or a survey, to view it, to surf it and to answer.

Here you find a list of some relevant characteristics about this software:

- a system allowing editing, delivery and tracking of questions, quizzes and survey;
- possibility to easily change the graphical interface, to customize depending on the use context;
- possibility to manage and customize groups for access to quizzes on the basis of the ongoing projects;
- integration (single sign-on) with the platforms Moodle and COL:
  - Moodle: T3 application is included as an activity within a course;
  - T3 integration with COL – Online Courses, the proprietary platform developed at Centro METID;
- the system is also designed to enable the rapid development of questionnaires and surveys, without pre-authentication;
- a mobile version of the tool is in progress;
- possibility to enter mathematical formulas in the text of questions, answers and feedback:
  - The FCK editor will be extended to enable the management of mathematical formulas using Latex;
- questions, answers and feedback can be in multimedia format:
  - It is possible embedding video, audio files, flash files, images, and to insert multiple attachments in a special dedicated area;
- The system manages the following types of questions:
  - true/false, single choice, multiple choice, fill in the blank, drag&drop, point to click;
  - customization of scores and feedback;
  - timing, inserting for each quiz date and start/end time, to establish a "maximum time" for execution of the quiz and of each single question;
  - export and import of quiz and of all reporting.

### Link to the demo

<http://www.t3.metid.polimi.it/> – For accessing insert METID as user and password; choose a demo quiz clicking on "Esegui" (we suggest: Astronomia generale); click on the button "Avvia quiz".

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# TEST OF DIGITAL COMPETENCE AND E-MATURITY FOR ADULT LEARNERS

*Ingrid Radtke, Vox – Norwegian Institute for Adult Learning, Norway*

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## Background for the test

Vox is an agency owned by the Ministry of Education and Research in Norway. We work to improve basic skills in the adult population in the areas of literacy, numeracy and the use of ICT. Although Norway's population has a high score in digital competence compared to other countries, there are still a large number of adults whose basic skills need to be addressed.

In order to help teachers and training institutions who work with improving basic skills in the adult population, Vox has developed a National framework with competence goals. A common framework that can help with the development of courses. The competence goals for digital competence describe three levels of digital competence.

On the basis of these competence levels, Vox has developed a computer based test of digital competence. The aim of the test is threefold: First, to map the level of knowledge of adult learners and possibly different levels of knowledge in different areas. (We find, for example, that a lot of adults are regularly using emails and net banking, but no other areas within the ICT) Secondly, help training institutions and teachers to tailor training and course, so that the learning process is more efficient and focused on the learning needs. And thirdly, evaluate learning outcomes after classes have been taken.

## E-maturity

The test is not only about testing basic skills when using a computer; it is also about what we call E-maturity. By e-maturity we mean the process how a person, as a dimension of acquiring ICT skills, develops towards a more independent user and consciously uses digital information and digital services. This is taken into consideration in the test through that the candidate is required to transfer prior learning and knowledge when he or she has to handle for example the interface of the test. Due to copyright issues and different standard, the interface in an item which shows a typical computer screen is made only as similar as possible to the standard computer screens.

## The innovative character of the test

Areas which are tested include a range of different applications from handling a pc, using digital tools, security issues, using the Internet and email, using public services on the Internet and using a pc for office use. Examples which form tasks are taken from working life, private life and society and education and learning.

This is in addition a test which is innovative through that it tries to widen the scope of other tests as the European Computer Driving Licence. This is done through a more practical approach where questions are taken from everyday life where ICT is used. In some questions practical skills are tested via simulation tasks. Examples are the use of a cash counter, the online ordering of a cinema ticket, advertisement of a car sale etc. In addition, we have developed questions which address consumer rights, copyright and ethical aspects when using ICT. The test is also made available for people who have reading difficulties through that they can activate a sound function. An artificial voice will then read the text loudly.

Methodologically, the computer based test is constructed as a semi-adaptive test. That means that we have an introductory part with 12 questions from all the three competence levels. Depending on how the candidate performs in this part, he or she will be tested more deeply on the appropriate level.

Before test takers go through the test, they are asked to have a look at a demo where navigation through the test and question types is demonstrated. The demo can be watched at [www.vox.no/digitaltesten](http://www.vox.no/digitaltesten).

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# FROM STATIC WEB PRESENCE TO DYNAMIC E-SOCIAL REPUTATION: AN ON-LINE EVALUATION TOOL FOR EDUCATION PROFESSIONALS

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Ildiko Mazar, European Distance and E-Learning Network, United Kingdom, Saverio Pescuma, ISFOL,  
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## Aims of project

The eTTCampus 2.0 (<http://www.ettcampus.org>) project aims at consolidating the European Virtual Campus created in a previous project for teachers and trainers as a reference of new ICT trends and tools in education, in particular to define and test an evaluation process for the e-social reputation of teachers and trainers performance as a new tool for their portfolio of competencies.

## Definitions of e-social reputation

To develop an e-social reputation, a web user must first develop a web presence. The project Consortium defines a web presence as: *an intentional and socially constructed professional and personal profile that is developed dynamically and intentionally through the support of web technology*; and e-social reputation as: *a socially constructed judgement made on an individual's or group's professional standing, based upon specific features of their web-based profile, including their contributions to the interests of the online community*.

## Why do you need an e-social reputation?

Teachers, trainers, researchers and learners in the 21<sup>st</sup> century are making increasing use of the web to meet both social and professional needs. Recently, when searching for goods and services, it has become relatively common place to use 'reviews' and 'ratings' before making a decision to purchase. Increased consumerism, especially in higher education, combined with greater web visibility of the providers suggests that it may be time for education professionals to consider their on-line presence and reputation in the worldwide community. As providers of research outputs, managers of projects, authors of articles, presenters at conferences, facilitators of workshops and subject specialists, academics are well placed to use the eTTCampus e-social reputation tool to enable viewers to rate this wide range of products and services. Using the tool allows academics and trainers to develop a series of cards that can be used to evaluate outputs and generate an e-social reputation.

## Creating your e-social reputation and rating cards

Once registered, users are able to create a profile and then separate cards for each product or service they provide which can be rated and the e-social reputation is established.



To begin the process visit <http://www.ettcampus.org/eSocial.php>. From the tags at top of screen choose "web reputation site". From the links on the left choose "web reputation" site then "register" and complete the registration form. Log in and follow navigation on left hand side. Once created, ratings cards may be used in a wide range of web based applications such as Ning, LinkedIn, Netvibes, etc.

## Aims of the demonstration

To provide delegates with an overview of the eTTCampus 2.0 project's e-social reputation tool and demonstrate its use to raise awareness to its potential for evaluating teachers', trainers' and researchers' products and services, in particular contributions to the EDEN conference.

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# TEACHING STATISTICS AND RESEARCH METHODOLOGY WITH E-LEARNING AS A PART OF INITIAL TEACHER TRAINING

*Jacob Gujski, Miri Shonfeld, Kibbutzim College of Education, Technology and Art, Israel*

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## Statistics and Research Methodology Courses as a Part of Initial Teacher Training

Courses in Statistics and Research Methodology are mandatory for all students taking part in the pre-service program of Teacher education in Israel. In this frame of work, pre-service teachers need to experience technology in their training, and therefore using technology should be an integral part of the teaching and learning process (Shonfeld, Hotter and Ganaim, 2006). This is because research reveals that in-service teachers do not use technology in school because they didn't experience it in College (Lan, 2001; Bay & Lehman, 2003; Collier, Weinburgh & Rivera, 2004).

In order to address this problem, some colleges have decided to transform traditional courses to online courses, and consider Research Methodology courses to be the most suitable for introducing such a change. In order to address this problem, some colleges have decided to transform traditional courses to online courses. The Kibbutzim College considered Statistics and Research Methodology courses to be the most suitable for introducing such a change and decided to provide such courses in full and partial e-learning format. This decision is a part of a general policy to encourage lecturers to prepare new and innovative courses using IT. This approach is now possible because all the lecturers and almost all the students have computers and an internet connection at home. Each student is obliged to take at least three e-learning courses during his studies.

The benefits of online learning, as mentioned by students, are the improvement in technology and writing skills, and the experiencing of new methods of communication (Brown, Kirkpatrick & Wisley, 2003). There are also benefits that cannot be gained by traditional learning such as ease of asynchronous access, low marginal cost for additional students, the opportunity to take a variety of courses from different sources, and the flexibility to respond to multiple learning styles.

## Changing Existing Courses into E-Learning Courses

The process of changing existing course into e-learning course is long and laborious. It is not only the technology that changes but also pedagogy. Lecturers who want to implement e-learning in their courses (fully or partially) are expected to participate in an in-service course given by an experienced team of specialists throughout the academic school-year. The team provides full support to every teacher who has undertaken the challenge of e-learning in his classes.

Two main software platforms are used in this project:

- Asynchronous platform – HighLearn, provided by Britannica Knowledge Systems, which is used by all the teachers and students as a Learning Management System embedded in an internet site. Each class has its own site. All the course materials are available on the site. Assignments are accessible to the students from the class site and the students submit them through their personal task boxes opened on the site. The final exam is carried out online and the grades are calculated automatically from students' responses in the exam.
- Synchronous platform – Interwise Connect, provided by AT&T., which allows lecturers to give full online lectures to large groups of students. The lecturer can use a variety of means, such as: PowerPoint presentations, images, worksheets, etc. The lecturer can also ask questions in multiple-choice format, see and show the answers online and comment on them. Students are allowed to send notes to the lecturer and receive a response. The lecturer is responsible for giving "right to speak" to students.

## *The Process of Building an E-Learning Course in Statistics*

### *The First Phase of the Process*

Our first implementation of an e-learning course in statistics started with a small group of 20 students and required preparation of new teaching and learning materials. The most work-intensive task was preparing new PowerPoint presentations for each topic in the curriculum, since we had to consider the possibility that the students would use them as their main learning text. Assignments were adapted to the different medium - the students had to submit (for the first time) their papers as online files to the task boxes. Through the 15 weeks of the semester, 5 face-to-face meetings and 5 online synchronous sessions took place. The final test was administered using the testing facility of the HighLearn asynchronous platform.

### *The Second Phase of the Process*

In this phase a much larger group of students (150) participated in e-learning courses. One small group of 20 students studied in a mode similar to the first phase; the other students participated in a course which used the asynchronous platform as the main instructional medium in addition to regular class lectures. Submission of assignments in all classes was only through the Internet. Only the final lecture, devoted to question and answers about the final test, was synchronous. The final test was administered using the testing facility of the HighLearn asynchronous platform. New test items were added and some of the previous items were improved.

### *The Third Phase of the Process*

In this phase, still ongoing at the time of writing, a group of four statistics lecturers undertook the task to change their course and adopt some of the methods implemented in the previous stages. New teaching ideas are being discussed and tested, such as different lecturers teaching different course topics to all 400 students and not only to their classes, using the synchronous platform. The process is still continuing, but we expect to report preliminary results in our presentation.

## **The Main Objective of the Presentation**

In the demonstration both platforms and the online pedagogy will be presented and discussed. The adaptation of a traditional statistics course to an e-learning course will be proposed as an example of team work that facilitates the huge amount of work that has to be done. The innovative aspects of the change will be presented and discussed.

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## TRAINING SPEAKING SKILLS IN DISTANCE EDUCATION

*Pieter Van Haute, Expertise Group Distance Learning, KATHO University College, Tielt, Belgium*

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### Need for skill training

The progress in e-learning methods has made it possible for students to log in to a LMS and open documents, discuss and collaborate with fellow students, update their personal online portfolio, upload assignments, edit group blogs, share wikis, watch videos, listen to podcasts, etc.

However, when it comes to teaching skills, such as speaking, writing or singing, students are very often left in the cold. Teachers are very often faced with all kinds of practical obstacles to teach speaking and other skills to a large group of students, even in face-to-face sessions, let alone in distance learning.

For those lecturers or tutors teaching French, English or Spanish it is not too hard to find readymade web-based courses that help develop language skills of their students. However, these courses are rarely fully adapted to the specific needs of the training. On the other hand, teachers of minor languages will not have the wide range of commercial courses at their disposal.

### Skill training through web-based design

Consequently alternative options, such as in-house development of web-based courses that meet the specific needs of the training, are desirable. One of the disadvantages may well be that lecturers often become very dependent on course developers – generally technicians – to have their courses developed and edited.

The *Expertise Group Distance Learning* co-ordinates and supports all course development projects by means of technical and pedagogic advice and by designing a basic structure in which teachers can easily add chapters, text, images, streaming videos, (online) exercises, recording tools, etc.

### Demonstration

This demonstration shows the result of a web-based course developed by tutors, in co-operation with the *Expertise Group Distance Learning*. We will run through the different sections of the website and then give a glance of how the course on speaking skills has been developed.

The web-based course does not only focus on the competences a teacher-to-be should acquire when speaking before a class of pupils (reading stories, holding presentations, giving instructions, etc.), but it also offers a basic training in breathing and mouth techniques, which are essential to a teacher. Furthermore, theory is always supported by video examples and audio files. Each section is provided with plenty of exercises that give the opportunity to students to listen, record and compare their results to the examples. That way they learn to assess their own progress. Every student can choose to make a selection of recordings and send them to the tutor for assessment.

This project is a pilot project and focuses on speaking skills. Because of the success and the structural support given to the teacher-developers, other tutors have started their own web-based course as well. At the moment, music tutors are developing a course to teach students how to sing and language teachers are about to set up an ambitious project to teach writing skills even to our most distant students.

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## LEARNING PROCESSES & MULTIMODAL REPRESENTATIONS

*Helena Danielsson, Lena Åström, Dalarna University, Sweden*

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Students have shown an increased preference for net-based learning over the last decade at Dalarna University, Sweden. Transmitting campus-based courses by distance has allowed for innovation. The challenges for university teachers as well as the affordance of creative tools are both on the agenda in our teacher education. From the students' perspective, different means of acquiring knowledge are necessary in which theory studies and performance work can be used complementary.

The aim of our demonstration session is to present our experiences of how different forms of knowledge appear both in the learning process as well as in students' project-work; the focus is on varieties of multimodal representation and presentation.

In our demonstration, we discuss how different forms of knowledge appear, and how they can be expressed and represented in student interaction with different media texts. This particular construction of knowledge is especially important for those contemporary teacher-training programs that are based on socio-cultural pedagogical theory. In our work, we take inspiration from both visual literacy and media literacy. The usage of multimodal representations has been developed to extend and deepen the students' theoretical knowledge of the content of a variety of educational courses. We address the following questions: What happens when these different areas work together in the creation of new knowledge? What kinds of representations can be used to express scientific knowledge? When talking about representations here, we mean representations that concern students' research results as well as students' knowledge and learning processes. Through these combined processes, students gain knowledge of different theories as well as learn about different tools for developing multimodal representations. Our demonstration is based on material which students (net-based) produced as part of three different components of their ordinary program and courses at Dalarna University:

1. Education Science (Pedagogiskt arbete) – a foundation course in the teacher-training program – all levels of student (pre-school, compulsory school, upper-secondary school). In this course, students are given assignments that have them examine different theories while using multimodal processes to present knowledge through representations. Specific areas of focus are, for example, overviews of international curricula, and fundamental values and ethical discussions based on the Swedish curriculum.
2. The Communicative Individual (Den språkande människan) – a course in the specific program Languages, Play Activity and Learning (Språk, lek och lärande) for students who will work in pre-school or compulsory school. From an extended textual concept, the course focuses on esthetical learning processes; fantasy; and creativity. Students work with multimodal productions, their area of focus being literacy skills and knowledge of languages (Swedish, Swedish as a Second Language, multilingualism).
3. Exercises carried out with students by using different media, performance and digital tools both to inspire and to inform. Here, we emphasize short exercises that introduce students to multimedia and multimodal work processes.

By means of our demonstration session, we will discuss concepts such as esthetical learning processes, performance, creativity and extended textual concept. We will also examine the use of traditional scientific concepts when using an extended textual concept that includes written and spoken words; pictures; and movies. Our focus is to examine how net-based studies might offer new and interesting affordances and developmental tasks in this pedagogical field.

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**PRESENTATION OF THE PEDAGOGICAL AND GRAPHIC DESIGN INNOVATION ASPECTS OF THE LANGUAGE COURSES DEVELOPED BY THE POLISH VIRTUAL UNIVERSITY IN THE EU LEONARDO DA VINCI PROJECT: DEVELOPING ENGLISH AND GERMAN LANGUAGE COURSE AND VOCATIONAL THEMATIC MATERIALS FOR AU PAIRS**

*Marta Dziubińska, Polish Virtual University, Poland*

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The Au-pairs ([www.aupair-guide.net](http://www.aupair-guide.net)) Leonardo da Vinci project focuses on improving the skills and competencies objective as well as the quality access to continuing vocational training. Nowadays due to a increasing mobility of people who often choose taking care of children as their professional career there is a need to create a tool which will help them both to improve their language skills and gain knowledge of the theoretical and practical aspects of the job they are going to do. Developing an innovative e-learning course based on the idea of content and language integrated learning (CLIL) curriculum, combining both language competencies improvement and the study of the general pedagogy related issues and creating a tool which is easily accessible to everyone planning to continue or take up their vocational education in the particular area of child development and pedagogy were the main goals for the project consortium.

The output of the project realisation and the product of the project are the two professional language courses in the format of self-study e-learning packages. The courses are designed for young people who intend to work as au pairs in English or German speaking countries. The innovation aspects originally focused on the idea of integration of the study of subject matters related to general pedagogical aspects of child development and the practical nature of an au pair's job with language competencies improvement. Both of these appear essential for au pairs to perform their duties and deal with everyday situations.

Within the course of the content design and development there appeared several issues which were carefully considered and taken into account by the instructional designers, graphic designers and technology developers. The close cooperation of these experts and involvement of the authors of the courses resulted in a creation of a product featuring educational innovation, self-learning and e-learning, with the view to foreign language and integrated learning promotion. The issues considered in the course of design process and project product development encompass a complex of dilemmas which basically formed in the question of how to best provide a user-friendly accessible and interesting language course available on a CD with both theoretical and language modules which can be used with or without a trainer at one's own pace by different groups of users such as au pairs, the unemployed, students and other people willing to work as au pairs in English or German speaking countries, training institutions – which constitute quite a wide range of potential users supposedly inexperienced in the field of computer- and IT-aided learning and teaching. All of the features and characteristics of the Au-pairs course will be presented at the demonstration. The presentation will focus also on issues related to an understanding of educational challenges and socio-cultural implications of new technologies in education.

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# THE E-LEARNING SYSTEM OF VIENNA UNIVERSITY OF TECHNOLOGY: ADAPTATIONS, ENHANCEMENTS AND EXTENSIONS OF MOODLE TO MEET TEACHING AND LEARNING NEEDS OF THE FUTURE

*Katarzyna Potocka, Andreas Hruska, E-Learning Centre, Vienna University of Technology, Austria*

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## Introduction

This demonstration gives an introduction to the enhancements of the Learning Management System TUWEL of Vienna University of Technology, which facilitates Moodle as its core. The system is being used since 2005 – starting with 1,000 users and growing to 23,000 by January 2009 – to support learning and teaching at the university. It has been under active development since then.

The production system of TUWEL will be used to provide a live insight into the LMS of the University of Technology in Vienna and the deployment of new features in selected courses.

## Demonstration contents

The presentation includes features we implemented according to the needs and requirements of the university's teachers, students and organisational staff:

- Interface between TUWEL (our Moodle instance) and TUWIS++ (the Information System of Vienna University of Technology which contains information regarding institutes, courses and curricula) providing a digital workflow from course creation and participant management to grading and certification.
- Updating user specific data during login, in order to keep last name, first name, registration number and e-mail always up-to-date.
- Automatic synchronisation between the course start date and the visibility of courses, performed by a daily cron script, so that course creators do not have to bother updating the start date at the beginning of the term.
- Extension of the assignment module includes the file name convention checker, file type checker, a print view of all submissions and a zip & download possibility of all submitted assignments.
- The scheduler module enhanced with additional features contains an improved time-slot enrolment visualisation, enrolment and un-enrolment deadline setting options and a print view possibility of all timeslots with corresponding data.
- The checkmark assignment - a new assignment type to facilitate a very popular exercise mode at the Vienna University of Technology: Students have to solve up to ten (calculation-)exercises per week. They submit information on which exercises they were able to solve and are randomly asked to present these at the next face-to-face session, receiving or losing credits. This process – assignment, submission, automatic credits, print possibility and the marking – is now implemented within the new checkmark assignment type.
- Implementation of the possibility to upload a grading file within the online assignment. Its content is integrated directly into the specified assignment. This enhancement is mostly used for non-online activities like laboratory work or practical/outdoor exercises.
- For a faster and easier creation of a course the element replication makes it possible to copy already created elements. You just have to choose the elements (e.g. forum, chat, assignment) you want to replicate and decide how often they should reappear within your course.

We will demonstrate how a big scale deployment of an LMS with continuous enhancements based on new online learning scenario requirements can promote the evolution of new learning scenarios of tomorrow to keep up with the ever-changing needs and requirements of a university.

By showing how Vienna University of Technology accomplishes this goal with TUWEL we want to share our insights and findings. Some enhancements are available for download at  
<http://tracker.moodle.org/secure/IssueNavigator.jspa?reset=true&query=hruska+potocka&description=true&body=true>.