

Table of Contents

Keynotes

Making Sense of Sensemaking in the Digital World	1
<i>Peter Pirolli</i>	
Towards an Interdisciplinary Design Science of Learning	3
<i>Mike Sharples</i>	
Use and Acquisition of Externalized Knowledge	5
<i>Friedrich W. Hesse</i>	

Adaptation and Personalisation

LAG 2.0: Refining a Reusable Adaptation Language and Improving on Its Authoring	7
<i>Alexandra I. Cristea, David Smits, Jon Bevan, and Maurice Hendrix</i>	
The Conceptual and Architectural Design of a System Supporting Exploratory Learning of Mathematics Generalisation	22
<i>Darren Pearce and Alexandra Poulovassilis</i>	
Experience Structuring Factors Affecting Learning in Family Visits to Museums	37
<i>Marek Hatala, Karen Tanenbaum, Ron Wakkary, Kevin Muise, Bardia Mohabbati, Greg Corness, Jim Budd, and Tom Loughin</i>	
Personalisation of Learning in Virtual Learning Environments	52
<i>Dominique Verpoorten, Christian Glahn, Milos Kravicik, Stefaan Ternier, and Marcus Specht</i>	
A New Framework for Dynamic Adaptations and Actions	67
<i>Carsten Ullrich, Tianxiang Lu, and Erica Melis</i>	
Getting to Know Your User – Unobtrusive User Model Maintenance within Work-Integrated Learning Environments	73
<i>Stefanie N. Lindstaedt, Günter Beham, Barbara Kump, and Tobias Ley</i>	
Adaptive Navigation Support for Parameterized Questions in Object-Oriented Programming	88
<i>I-Han Hsiao, Sergey Sosnovsky, and Peter Brusilovsky</i>	
Automated Educational Course Metadata Generation Based on Semantics Discovery	99
<i>Marián Šimko and Mária Bielíková</i>	

Searching for “People Like Me” in a Lifelong Learning System 106
*Nicolas Van Labeke, George D. Magoulas, and
Alexandra Poulouvassilis*

Interoperability, Semantic Web, Web 2.0

Metadata in Architecture Education - First Evaluation Results of the
MACE System 112
Martin Wolpers, Martin Memmel, and Alberto Giretti

Phantom Tasks and Invisible Rubric: The Challenges of Remixing
Learning Objects in the Wild 127
*David E. Millard, Yvonne Howard, Patrick McSweeney,
Miguel Arrebola, Kate Borthwick, and Stavroula Varella*

Can Educators Develop Ontologies Using Ontology Extraction Tools:
An End-User Study 140
*Marek Hatala, Dragan Gašević, Melody Siadaty,
Jelena Jovanović, and Carlo Torniai*

Sharing Distributed Resources in LearnWeb2.0 154
Fabian Abel, Ivana Marenzi, Wolfgang Nejdl, and Sergej Zerr

SWeMoF: A Semantic Framework to Discover Patterns in Learning
Networks 160
*Marco Kalz, Niels Beekman, Anton Karsten, Diederik Oudshoorn,
Peter Van Rosmalen, Jan Van Bruggen, and Rob Koper*

Data Mining and Social Networks

Social Network Analysis of 45,000 Schools: A Case Study of Technology
Enhanced Learning in Europe 166
Ruth Breuer, Ralf Klamma, Yiwei Cao, and Riina Vuorikari

Analysis of Weblog-Based Facilitation of a Fully Online Cross-Cultural
Collaborative Learning Course 181
Anh Vu Nguyen-Ngoc and Effie Lai-Chong Law

Sharing Corpora and Tools to Improve Interaction Analysis 196
Christophe Reffay and Marie-Laure Betbeder

Collaboration and Social Knowledge Construction

Distributed Awareness for Class Orchestration 211
Hamed S. Alavi, Pierre Dillenbourg, and Frederic Kaplan

Remote Hands-On Experience: Distributed Collaboration with Augmented Reality	226
<i>Matthias Krauß, Kai Riege, Marcus Winter, and Lyn Pemberton</i>	
A Comparison of Paper-Based and Online Annotations in the Workplace	240
<i>Ricardo Kawase, Eelco Herder, and Wolfgang Nejdl</i>	
Learning by Foraging: The Impact of Social Tags on Knowledge Acquisition	254
<i>Christoph Held and Ulrike Cress</i>	
Assessing Collaboration Quality in Synchronous CSCL Problem-Solving Activities: Adaptation and Empirical Evaluation of a Rating Scheme ...	267
<i>Georgios Kahrmanis, Anne Meier, Irene-Angelica Chounta, Eleni Voyiatzaki, Hans Spada, Nikol Rummel, and Nikolaos Avouris</i>	

Learning Communities and Communities of Practice

Facilitate On-Line Teacher Know-How Transfer Using Knowledge Capitalization and Case Based Reasoning	273
<i>Celine Quenu-Joiron and Thierry Condamines</i>	
Edushare, a Step beyond Learning Platforms	283
<i>Romain Sauvain and Nicolas Szilas</i>	
Design in Use of Services and Scenarios to Support Learning in Communities of Practice	298
<i>Bernadette Charlier and Amaury Daele</i>	
Creating an Innovative Palette of Services for Communities of Practice with Participatory Design: Outcomes of the European Project PALETTE	304
<i>Liliane Esnault, Amaury Daele, Romain Zeiliger, and Bernadette Charlier</i>	

Learning Contexts

NetLearn: Social Network Analysis and Visualizations for Learning	310
<i>Mohamed Amine Chatti, Matthias Jarke, Theresia Devi Indriasari, and Marcus Specht</i>	
Bridging Formal and Informal Learning – A Case Study on Students' Perceptions of the Use of Social Networking Tools	325
<i>Margarida Lucas and António Moreira</i>	
How to Get Proper Profiles? A Psychological Perspective on Social Networking Sites	338
<i>Katrin Wodzicki, Eva Schwämmlein, and Ulrike Cress</i>	

Collaborative Learning in Virtual Classroom Scenarios.....	344
<i>Katrin Allmendinger, Fabian Kempf, and Karin Hamann</i>	
Review of Learning in Online Networks and Communities	350
<i>Kirsti Ala-Mutka, Yves Punie, and Anusca Ferrari</i>	
Self-profiling of Competences for the Digital Media Industry: An Exploratory Study	365
<i>Svenja Schröder, Sabrina Ziebarth, Nils Malzahn, and H. Ulrich Hoppe</i>	
PPdesigner: An Editor for Pedagogical Procedures	379
<i>Christian Martel, Laurence Vignollet, Christine Ferraris, Emmanuelle Villiot-Leclercq, and Salim Ouari</i>	
Ontology Enrichment with Social Tags for eLearning	385
<i>Paola Monachesi, Thomas Markus, and Eelco Mossel</i>	

Problem and Project-Based Learning, Inquiry Learning

How Much Assistance Is Helpful to Students in Discovery Learning?....	391
<i>Alexander Borek, Bruce M. McLaren, Michael Karabinos, and David Yaron</i>	
A Fruitful Meeting of a Pedagogical Method and a Collaborative Platform.....	405
<i>Bénédicte Talon, Dominique Leclet, Grégory Bourguin, and Arnaud Lewandowski</i>	
A Model of Retrospective Reflection in Project Based Learning Utilizing Historical Data in Collaborative Tools	418
<i>Birgit R. Krogstie</i>	
Fortress or Demi-Paradise? Implementing and Evaluating Problem-Based Learning in an Immersive World	433
<i>Maggi Savin-Baden</i>	
Project-Based Collaborative Learning Environment with Context-Aware Educational Services.....	441
<i>Zoran Jeremić, Jelena Jovanović, Dragan Gašević, and Marek Hatala</i>	

Learning Design

Constructing and Evaluating a Description Template for Teaching Methods	447
<i>Michael Derrtl. Susanne Neumann, and Petra Oberhuemer</i>	

Model and Tool to Clarify Intentions and Strategies in Learning Scenarios Design	462
<i>Valérie Emin, Jean-Philippe Pernin, and Viviane Guéraud</i>	

Users in the Driver's Seat: A New Approach to Classifying Teaching Methods in a University Repository	477
<i>Susanne Neumann, Petra Oberhuemer, and Rob Koper</i>	

Motivation, Engagement, Learning Games

Generating Educational Interactive Stories in Computer Role-Playing Games	492
<i>Marko Divéky and Mária Bieliková</i>	

CAMera for PLE	507
<i>Hans-Christian Schmitz, Maren Scheffel, Martin Friedrich, Marco Jahn, Katja Niemann, and Martin Wolpers</i>	

Implementation and Evaluation of a Tool for Setting Goals in Self-regulated Learning with Web Resources	521
<i>Philipp Scholl, Bastian F. Benz, Doreen Böhnstedt, Christoph Rensing, Bernhard Schmitz, and Ralf Steinmetz</i>	

The Impact of Prompting in Technology-Enhanced Learning as Moderated by Students' Motivation and Metacognitive Skills	535
<i>Pantelis M. Papadopoulos, Stavros N. Demetriadis, and Ioannis G. Stamelos</i>	

Creating a Natural Environment for Synergy of Disciplines	549
<i>Eugenia Sendova, Pavel Boytchev, Eliza Stefanova, Nikolina Nikolova, and Eugenia Kovatcheva</i>	

Human Factors and Evaluation

Informing the Design of Intelligent Support for ELE by Communication Capacity Tapering	556
<i>Manolis Mavrikis and Sergio Gutierrez-Santos</i>	

Automatic Analysis Assistant for Studies of Computer-Supported Human Interactions	572
<i>Christophe Courtin and Stéphane Talbot</i>	

Real Walking in Virtual Learning Environments: Beyond the Advantage of Naturalness	584
<i>Matthias Heintz</i>	

Guiding Learners in Learning Management Systems through Recommendations	596
<i>Olga C. Santos and Jesus G. Boticario</i>	

Supervising Distant Simulation-Based Practical Work: Environment
and Experimentation 602
*Viviane Guéraud, Anne Lejeune, Jean-Michel Adam,
Michel Dubois, and Nadine Mandran*

Posters

Designing Failure to Encourage Success: Productive Failure in a
Multi-user Virtual Environment to Solve Complex Problems 609
Shannon Kennedy-Clark

Revisions of the Split-Attention Effect 615
Athanasios Mazarakis

Grid Service-Based Benchmarking Tool for Computer Architecture
Courses 621
*Carlos Alario-Hoyos, Eduardo Gómez-Sánchez,
Miguel L. Bote-Lorenzo, Guillermo Vega-Gorgojo, and
Juan I. Asensio-Pérez*

Supporting Virtual Reality in an Adaptive Web-Based Learning
Environment 627
*Olga De Troyer, Frederic Kleinermann, Bram Pellens, and
Ahmed Ewaïs*

A Model to Manage Learner’s Motivation: A Use-Case for an Academic
Schooling Intelligent Assistant 633
*Tri Duc Tran, Christophe Marsala,
Bernadette Bouchon-Meunier, and Georges-Marie Putois*

Supporting the Learning Dimension of Knowledge Work 639
Stefanie N. Lindstaedt, Mario Aehnelt, and Robert de Hoog

User-Adaptive Recommendation Techniques in Repositories of Learning
Objects: Combining Long-Term and Short-Term Learning Goals 645
*Almudena Ruiz-Iniesta, Guillermo Jiménez-Díaz, and
Mercedes Gómez-Albarrán*

Great Is the Enemy of Good: Is Perfecting Specific Courses Harmful to
Global Curricula Performances? 651
Maura Cerioli and Marina Ribaudó

Evolution of Professional Ethics Courses from Web Supported Learning
towards E-Learning 2.0 657
Katerina Zdravkova, Mirjana Ivanović, and Zoran Putnik

Towards an Ontology for Supporting Communities of Practice of
E-Learning “CoPEs”: A Conceptual Model 664
Lamia Berkani and Azeddine Chikh

Using Collaborative Techniques in Virtual Learning Communities	670
<i>Francesca Pozzi</i>	
Capturing Individual and Institutional Change: Exploring Horizontal versus Vertical Transitions in Technology-Rich Environments	676
<i>Andreas Gegenfurtner, Markus Nivala, Roger Säljö, and Erno Lehtinen</i>	
A Platform Based on Semantic Web and Web2.0 as Organizational Learning Support	682
<i>Adeline Leblanc and Marie-Hélène Abel</i>	
Erroneous Examples: A Preliminary Investigation into Learning Benefits	688
<i>Dimitra Tsovaltzi, Erica Melis, Bruce M. McLaren, Michael Dietrich, Georgi Gogvadze, and Ann-Kristin Meyer</i>	
Towards a Theory of Socio-technical Interactions	694
<i>Ravi K. Vatrupu</i>	
Knowledge Maturing in the Semantic MediaWiki: A Design Study in Career Guidance	700
<i>Nicolas Weber, Karin Schoefegger, Jenny Bimrose, Tobias Ley, Stefanie Lindstaedt, Alan Brown, and Sally-Anne Barnes</i>	
Internet Self-efficacy and Behavior in Integrating the Internet into Instruction: A Study of Vocational High School Teachers in Taiwan	706
<i>Hsiu-Ling Chen</i>	
Computer-Supported WebQuests	712
<i>Furio Belgiorino, Delfina Malandrino, Ilaria Manno, Giuseppina Palmieri, and Vittorio Scarano</i>	
A 3D History Class: A New Perspective for the Use of Computer Based Technology in History Classes	719
<i>Claudio Tosatto and Marco Gribaudo</i>	
Language-Driven, Technology-Enhanced Instructional Systems Design	725
<i>Iván Martínez-Ortiz, José-Luis Sierra, and Baltasar Fernández-Manjón</i>	
The Influence of Coalition Formation on Idea Selection in Dispersed Teams: A Game Theoretic Approach	732
<i>Rory L.L. Sie, Marlies Bitter-Rijkema, and Peter B. Sloep</i>	
How to Support the Specification of Observation Needs by Instructional Designers: A Learning-Scenario-Centered Approach	738
<i>Boubekeur Zendagui</i>	

Using Third Party Services to Adapt Learning Material: A Case Study with Google Forms	744
<i>Luis de la Fuente Valentín, Abelardo Pardo, and Carlos Delgado Kloos</i>	
Virtual Worlds for Organization Learning and Communities of Practice	751
<i>C. Candace Chou</i>	
A Methodology and Framework for the Semi-automatic Assembly of Learning Objects	757
<i>Katrien Verbert, David Wiley, and Erik Duval</i>	
Search and Composition of Learning Objects in a Visual Environment	763
<i>Amel Bouzeghoub, Marie Buffat, Alda Lopes Gançarski, Claire Lecocq, Abir Benjemaa, Mouna Selmi, and Katherine Maillet</i>	
A Framework to Author Educational Interactions for Geographical Web Applications	769
<i>The Nhan Luong, Thierry Nodenot, Philippe Lopistéguy, and Christophe Marquesuzaà</i>	
Temporal Online Interactions Using Social Network Analysis	776
<i>Álvaro Figueira</i>	
Context-Aware Combination of Adapted User Profiles for Interchange of Knowledge between Peers	782
<i>Sergio Gutierrez-Santos, Mario Muñoz-Organero, Abelardo Pardo, and Carlos Delgado Kloos</i>	
ReMashed – Recommendations for Mash-Up Personal Learning Environments	788
<i>Hendrik Drachsler, Dries Pecceu, Tanja Arts, Edwin Hutten, Lloyd Rutledge, Peter van Rosmalen, Hans Hummel, and Rob Koper</i>	
Hanse 1380 - A Learning Game for the German Maritime Museum	794
<i>Walter Jenner and Leonardo Moura de Araújo</i>	
A Linguistic Intelligent System for Technology Enhanced Learning in Vocational Training – The ILLU Project	800
<i>Christoph Rösener</i>	
e ³ -Portfolio – Supporting and Assessing Project-Based Learning in Higher Education via E-Portfolios	806
<i>Philip Meyer, Thomas Sporer, and Johannes Metscher</i>	
Author Index	811