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Edited by
Dr. Hans Beldhuis
University of Groningen
The Netherlands
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Preface

These Proceedings represent the work of contributors to the 11th European Conference on e-learning, ECEL 2012, hosted this year by the University of Groningen, The Netherlands. The Conference Chair is Prof. Cees Smit Sibinga, and the Programme Chair is Dr Hans Beldhuis.

The conference will be opened with a keynote address by Prof. Eric Mazur from Harvard University, on the topic of Confessions of a Converted Lecturer. Also on the first day we have a presentation from Dan Peters of Blackboard, Europe. We would especially like to thank BlackBoard for their support of the conference this year. The second day will be opened by Prof. dr. Fred Mulder, UNESCO Chair in Open Educational Resources at Open Universiteit, The Netherlands, and later that day we have Prof. Johannes Cronjé from Cape Peninsula University of Technology in South Africa.

As usual the papers cover a wide spectrum of issues, all of which are pertinent to the successful use of e-learning. The papers represent current thinking on e-learning issues and within the five conference themes, contributions cover:

- Open educational resources (OER) and use of online materials and learning analytics
- (social) media use in e-learning with a special focus on mobile learning
- electronic assessment, with a special focus on automated assessment
- didactics and e-learning, following Eric Mazur’s work going deeper into the topic of peer-instruction
- Other conference highlights cover literacy skills and the changing role of teachers

It is clear that the role being played by e-learning in the pedagogical process is considerable and that there is still ample scope for further development. For this conference, the focus is on looking beyond the gadgets and the broad spectrum of papers demonstrates when, where and how e-learning is selected for its true value.
The ECEL Conference constitutes a valuable platform for individuals to present their research findings, display their work in progress and discuss conceptual advances in many different branches of e-learning. At the same time, it provides an important opportunity for members of the community to come together with peers, share knowledge and exchange ideas.

With an initial submission of 165 abstracts, after the double blind, peer review process there are 59 academic papers, 1 Phd Paper and 12 Work in Progress papers in these Conference Proceedings. These papers reflect the truly global nature of research in the area with contributions from Austria, Canada, Czech Republic, Denmark, Estonia, Finland, Germany, Greece, India, Iran, Ireland, Italy, Japan, Jordan, Lithuania, Malaysia, New Zealand, Northern Ireland, Portugal, Romania, Slovakia, South Africa, Spain, Sweden, Switzerland, Taiwan, The Netherlands, United Kingdom and the United States.


I wish you a most interesting conference.

Dr. Hans Beldhuis
University of Groningen, Groningen, The Netherlands
Programme Chair
October 2012
Conference Committee

Conference Executive
Prof. Cees Th. Smit Sibinga, University of Groningen, The Netherlands
Jaap Westerhuijs, Groningen Convention Bureau, Groningen,
Dr Hans J.A. Beldhuis, University of Groningen, The Netherlands
Jetse Goris, Wenckebach Institute, University Medical Center Groningen
Dr Koos Winnips, University of Groningen, The Netherlands

Mini Track Chairs
Prof. Dr. Valentina Dagiene, Institute of Mathematics at Vilnius University,
Vilnius, Lithuania
Dr Hans Beldhuis, University of Groningen, Groningen, The Netherlands
Dr Sue Greener, Brighton Business School, University of Brighton, UK

Committee members
The conference programme committee consists of key people in the e-learning community around the world. The following people have confirmed their participation:

Ariffin Abdul Mutalib (Universiti Utara Malaysia, Malaysia); Siti aishah Abdullah (University Technology Mara, Kelantan, Malaysia); Tofan Cezarina Adina (Spiru Haret University, Romania); Wilfried Admiraal (Universiteit van Amsterdam, Netherlands); Shafqat Ali (University of Western Sydney, Australia); Abdallah Al-Zoubi (Princess Sumaya University for Technology, Jordan); Margarida Amaral (University of Porto, Portugal); Antonios Andreatos (Hellenic Air Force Academy, Greece); Alla Anohina (Riga Technical University, Latvia); Jane Ardu (Stevenson College, Edinburgh, UK); Mohamed Arteimi (7th of April University, Tripoli, Libya); William Ashraf (University of Sussex, UK); Bunyamin Atici (Firat University, Turkey); Anders Avdic (Orebro University, Sweden); Simon Bachelor (Gamos, Reading, UK); Joan Ballantine (University of Ulster, UK); Trevor Barker (University of Hertfordshire, UK); Josep-Maria Batalla (Universitat Oberta de Catalunya, Spain); Orlando Belo (University of Minho Campus de Gualtar, Portugal); David Benito (Public University of Navarre, Pamplona, Spain); Yongmei Bentley (University of Luton, UK); Daniel Biella (University of Duisburg-Essen, Germany); Radu Bilba (George Bacovia University, Romania); Eric Bodger (University of Winchester, UK); Stephen Bowman (Ravensbourne College of Design and Communication, UK); Willem-Paul Brinkman (Delft University of Technology, Netherlands); Ann Brown (CASS Business
School, London, UK); Mark Brown (Massey University, Palmerston North, New Zealand); Giuseppe Cannavina (University of Sheffield, UK); Sven Carlsson (School of Economics and Management, Lund University, Sweden); James Carr (University of Newcastle, UK); Maggie Carson (Edinburgh University, UK); Antonio Cartelli (University of Cassino, Italy); Rommert Casimir (Tilburg University, The Netherlands); Ivana Cechova (University of Defence, Czech Republic); Maria Celentano (University of Lecce, Italy); Athina Chatzigiavriil (LSE, London,); Satyadhyan Chickerur (M.S. Ramaiah Institute of Technology, Bagalore, India); Burhan China (PDSA, Somalia); Barbara Class (University of Geneva, Switzerland); Lynn Clouder (Coventry University, UK); Thomas Connolly (University of West of Scotland, UK); Ken Currie (Edinburgh University, UK); Valentina Dagiene (Institute of Mathematics and Informatics, Vilnius, Lithuania); Mark De Groot (Leeds Metropolitan University, UK); Antonio De Nicola (ENEA, Italy); Carmen De Pablos Heredero (Rey Juan Carlos University, Spain); Rajiv Dharaskar (GH Raisoni College of Engineering, Nagpur, India); Vicenzo Di Lecce (Politecnico di Bari, Italy); Martina Doolan (University of Hertfordshire, UK); Christopher Douce (Institute of Educational Technology, Walton Hall, UK); Yanqing Duan (University of Luton, UK); Jane Eberle (Emporia State University, USA); Colin Egan (University of Hertfordshire, Hatfield, UK); Bulent Gursel Emiroglu (Eskisehir Yolu Baglica Mevkii, Turkey); Chew Esyin (University of Glamorgan, UK,); Ariwa Ezendu (London Metropolitan University, Uk); Bekim Fetaji (South East European University, Tetovo, Macedonia); Andrea Floros (Ionian University, Greece); Duncan Folley (Leeds Metropolitan University, England); Katie Goeman (Free University of Brussels (VUB), Belgium); Colin Gray (Edinburgh Napier University, Scotland); Susan Greener (University of Brighton, UK); David Guralnick (Kaleidoscope Learning, New York, USA); Richard Hall (De Montfort University, Leicester, UK); Patricia Harvey (Greenwich University, London, UK); Thanos Hatziapostolou (International faculty of the university of sheffield, Greece); Rose Heaney (University of East London, UK);); Alan Hilliard (University of Hertfordshire, Hatfield, UK); Uwe Hoppe (Bildungswerk der Sächsischen Wirtschaft gGmbH, Germany); Md. Fokhray Hossain (Daffodil International University, Bangladesh); Stefan Hrastinski (Uppsala University, Sweden); BALDE IDIATOU (NOBLE GROUP ORGANISED SOLUTIONS, GUINEA); Antonin Jancarik (Faculty of education, Charles University, Czech Republic); Amanda Jefferies (University of Hertfordshire, Hatfield, UK); Runa Jesmin (Global Heart Forum, UK); Aidan Johnston (Glasgow Caledonian University, UK); Paul Jones (University of Glamorgan, UK); Geraldine Jones (University of Bath, UK,); Jowati Juhary (National Defence University of Malaysia, Malaysia); Tuomo Kakkonen (University of eastern Finland, Finland); Michail Kologiannakis (School of
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ies (Manchester Medical School, UK); Keith Smyth (Napier University, Edinburgh, UK); Bent Soelberg (Copenhagen Business School, Denmark); Or Kan Soh (University Tunku Abdul Rahman (UTAR), Malaysia); Yeong-Tae Song (Towson University, Maryland, USA); Michael Sonntag (FIM, Johannes Kepler University, Linz, Austria); Rumen Stainov (University of Applied Sciences, Fulda, Germany); John Stav (Sør-Trøndelag University College, Norway); Roxana Taddei (Université Clermont Ferrand 2, Montpellier, France); Yana Tainsh (University of Greenwich, UK); Heiman Tali (The Open University, Israel); Bénédicte Talon (Université du Littoral, France); Marian Theron (False Bay College, Tokai, South Africa); John Thompson (Buffalo State College, USA); Claudine Toffolon (Université du Mans - IUT de Laval, France); Eulalia Torras-Virgili (Open University of Catalonia, Spain); Kathryn Trinder (Glasgow Caledonian University, UK); Christopher Turner (University of Winchester, UK); Karin Tweddell Levinson (Danish University of Education, Denmark); Aimilia Tzanavari (University of Nicosia, Cyprus); Huseyin Uzunboylu (Near East University, Cyprus); Linda Van Ryneveld (Tshwane University of Technology, Pretoria, South Africa); Carlos Vaz de Carvalho (Porto Polytechnic, Portugal); Andreas Veglis (Aristotle University of Thessaloniki, Greece); Bruno Warin (Université du Littoral, Calais, France); Fahad Waseem (University of Northumbria, Middlesbrough, UK); Garry Watkins (University of Central Lancashire, UK); Anne Wheeler (Aston University, UK); Steve Wheeler (Faculty of Education, University of Plymouth, UK); Nicola Whitton (Manchester Metropolitan University, UK); Roy Williams (University of Portsmouth, UK); Shirley Williams (University of Reading, UK); Stanislaw Wrycza (University of Gdansk, Poland); Rowena Yeats (University of Birmingham, UK); Panagiotis Zaharias (University of the Aegean, Greece); Mingming Zhou (Nanyang Technological University, Singapore); Chris Zielinski (External relations and Governing Bodies, World Health Organization, Geneva, Switzerland); Anna Zoakou (Ellino-germaniki Agogi, Greece);
Biographies

**Conference Chair**

**Prof. Cees Smit Sibinga** is specialist in Internal Medicine, Haematology and Transfusion Medicine, professor of International Development of Transfusion Medicine, Faculty of Medical Sciences, University of Groningen, NL. In 2001 he became Director of the Academic Institute for International Development of Transfusion Medicine (IDTM) in Groningen, an initiative of University of Groningen and WHO Department of Blood Safety and Clinical Technology. He created a unique post-graduate e-learning programme for leadership development. He has been and still is active in many international functions, teaching and training positions in transfusion medicine. He has been instrumental in numerous international development programmes, advising and guiding Governments in national blood safety reform programmes. He is a Fellow in Transfusion Medicine (Royal College of Physicians of Edinburgh and Royal College of Pathologists, London, UK). Currently he serves WHO as a Member of the Expert Committee for Blood Transfusion.

**Programme Chair**

**Dr Hans Beldhuis** is a programme manager for Education, Innovation and Technology at the University of Groningen, The Netherlands. His projects focus on the development and implementation of technology that improves every aspect of education. This ranges from student enrollment, educational information systems and learning analytics to the improvement and better use of electronic learning environments. Hans is specialized in the use of information technology in higher education. Recently, his focus has been shifting to change management concerning the organization-wide implementation of educational technology. The main goal is to identify effective ways to plan for and initiate change within the institution. Hans has a PhD in Mathematics and Natural Sciences, focusing on neuro-physiological, behavioral and immunocytochemical aspects of the development of epilepsy in relation to learning and memory. As a post-doctoral
researcher he worked at the Max Planck Institute for Behavioral Physiology (Erling Andechs/Munich, Germany) and the Department of Neurology, Lund University Hospital (Lund, Sweden), before entering the field of e-learning.

**Keynote Speakers**

**Prof. Johannes Cronjé** is the Dean of the Faculty of Informatics and Design at the Cape Peninsula University of Technology. He started his career as a schoolmaster at Pretoria boys High School, and then became a lecturer in communication at Pretoria Technikon, and later a professor of Computers in Education at the University of Pretoria. He holds two masters degrees and a doctorate from the University of Pretoria, and was visiting professor at universities in Norway, Finland, Sudan and Ethiopia. He has supervised more than 70 Masters and 38 doctoral students and has published more than 40 academic articles and chapters in books.

**Prof. Eric Mazur** is the Balkanski Professor of Physics and Applied Physics at Harvard University and Area Dean of Applied Physics. An internationally recognized scientist and researcher, he leads a vigorous research program in optical physics and supervises one of the largest research groups in the Physics Department at Harvard University. After obtaining a Ph.D. degree in experimental physics at the University of Leiden in the Netherlands in 1981, Dr. Mazur came to Harvard University in 1982. Dr. Mazur is interested in education, science policy, outreach, and the public perception of science. Mazur's teaching method has developed a large following, both nationally and internationally, and has been adopted across many science disciplines.

**Prof. dr. Fred Mulder** currently holds a UNESCO Chair in OER at the Open University in The Netherlands. Fred has served more than a decade as Rector Magnificus at OUNL, until the end of 2010. He has been working at OUNL in the discipline of Informatics as of 1983, when OUNL still was in its preparatory stage, in different positions. Mulder has been on the Executive
Committee of EADTU (European Association of Distance Teaching Universities) in 2002-2011. He has been chairing two international Task Forces on OER, one of the EADTU and the other one of the ICDE (International Council for Open and Distance Education). In 2011 he was awarded the ICDE Individual Prize of Excellence, in particular for his work on OER. In 2011-2012 he participated in an OECD expert team to collect and reflect on information about OER policies in the OECD countries. In 2007-2008 Fred Mulder was chair of the Dutch University Rector’s Conference. He has led a National Initiative on Lifelong Learning in 2005-2009 and as of 2009 he is chairing the Steering Committee of the Dutch National OER Program called Wikiwijs. For his work on Lifelong Learning he received a Royal decoration in 2007.

Mini Track Chairs

Dr Valentina Dagiene is head of the Department of Informatics Methodology at the Institute of Mathematics at Vilnius University. She has published over 150 scientific papers and a number of methodical works, and has written more than 60 textbooks in informatics and ICT for primary and secondary education. Her main research topics are informatics and ICT curricula, teaching algorithms and programming, technology enhanced learning, computing education research. She is member of International Committee of Olympiads in Informatics, vice chair of the Technical Committee of IFIP for Education (TC3), Editor-in-Chief of international journals “Informatics in Education” and “Olympiads in Informatics”.

Dr Sue Greener is a University teacher in the UK, teaching a range of business courses at undergraduate and postgraduate level. Subjects include HRM, Business Context, Research Methods and Learning and Development. Sue has received a Teaching Excellence award from the university and is developing an undergraduate honours degree in Business with Enterprise which has a problem-based learning ethos. She is Course Director of a fully online final year undergraduate course, where students from a range of countries and timezones are supported through online learning. Her research focuses on e-learning strategy, teacher support and development and reflective learning. She leads the Business e-Learning Re-
search Group and contributes to the CROME research group on employment issues at Brighton Business School. Doctoral research focussed on exploring student readiness for online learning. Sue was Conference chair: European Conference on E-Learning 2011 at University of Brighton and is co-editor of the Journal Interactive Learning Environments. Dr Greener holds a BA, MBA, EdD, FHEA and is a Chartered Fellow CIPD.

Biographies of Presenting Authors

Samuel Adu Gyamfi is a PhD fellow at the Centre for Media and Information Technologies of the University of Aalborg, Copenhagen. His research interest focuses on learning design in a blended e-learning environment.

Alaba Agbatogun is a doctoral student at The Moray House School of Education, The University of Edinburgh, United Kingdom. He holds a Master degree in Educational technology from University of Lagos, Nigeria. He lectures at Olabisi Onabanjo University, Nigeria. His areas of research include gender issues in educational technology, e-learning, technology and interactivity in education.

Gianluca Aiello is a barrister specialised in Private and Roman Law. He holds two masters degrees, in Law and in History, from the University of Napoli Federico II, where he has been Law tutor for several years. He has been collaborating with prof. Ambrosio as Diplomatics tutor at the above University and for Icarus Didactics.

Fatema Saif Hamood Al-Yazeedi is a 1st Year PhD student in Information Systems and Computing at Brunel University, UK. Previous degrees are a BSc in Computer Science, Sultan Qaboos University, Sultanate of Oman, and MSc Software System Technology, Sheffield University, United Kingdom. Her research interests are Computer aided learning (e-learning), Text mining, optimization.

Mohammad Akram Alzu'bi is an assistant professor in the English Department of Albalqa Applied University in Jordan and obtained his PhD in TEFL from Amman Arab University. His main research interests are language teaching methods, language acquisition and learning, translation,
LAL, CALL, and TEFL. He has published several academic papers in international journals and proceedings.

**Ketil Arnesen** is a major in physics. He is head of the Department of General Science at Sør-Trøndelag University College. His field of research is use of mobile technology and response system in engineering education.

**Mihaela Sabina Dolf Baier** has a double Bachelor degree, one earned at Lucian Blaga Univesity of Sibiu, Romania, specialization Economy of tourism, commerce and services, and one from Bremen Univesity of Applied Sciences, Germany, specialization Tourism Management. She is currently finishing her master studies in Business Administration in Tourism at the two mentioned universities.

**Zwelijongile Baleni** graduated M.Ed in 2000 at Free State University, South Africa. He is currently registered for PhD with topic on “E-Assessment Discourse: Its Impact to Improve Feedback to Students at Walter Sisulu University (WSU)”. Research interest is in assessment and e-learning strategies. Currently acting as Deputy Director Continuous Professional Development, Centre for Learning and Teaching Development.

**Dr Trevor Barker** is Principal Lecturer and University Fellow in Teaching and Learning, Department of Computer Science, University of Hertfordshire. He obtained a PhD for research into intelligent adaptive multimedia computer systems for use in education. His recent research relates to the design and evaluation of adaptive educational systems and the affordances of virtual worlds such as Second Life for study and work.

**Mel Brown** is a Programme Leader BA(hons) & FD Illustration at Plymouth College of Art. She has been teaching both theory and practice since 1999 having long since decided that working alongside the next generation of Illustrators & Image-makers was exactly where she wanted to be.

**Dr. Aleid Brouwer** is assistant professor in Economic Geography at the University of Groningen. In her lectures she incorporates innovative electronic learning environments and uses tools for interaction such as smartphones. Furthermore, she keeps students involved through social media with and for her courses.
Sheryl Buckley is currently acting Chair of Department in the School of Computing at the University of South Africa. Her interests lie in the Information Science discipline, e-learning, business intelligence and communities of practice. She previously taught at the University of Johannesburg for 11 years. She is also Examiner for the Gauteng Department of Education.

Nati Cabrera is currently Academic Coordinator at the UOC’s School for Cooperation. She is a lecturer at the School for Cooperation and on the Master’s Degree in Education and ICTs programme. She is a member of the Edul@b research group at the UOC’s eLearn Center.

Martin Cápay works as a professor assistant at the Department of Informatics. He deals with the theory of teaching informatics subjects, mainly programming. He participates in the projects aimed at the usage of new competencies in teaching and also in the projects dealing with learning in virtual environment using e-learning courses.

Anna Carreras-Marín has a Degree in Economics, Universitat de Barcelona (Spain) and PhD. In Economic History, Universitat de Barcelona (Spain). She is Associate Lecturer at Economic History Department, Universitat de Barcelona, Barcelona (Spain) and Main researcher of the GIDC-Grup d’Innovació Docent Consolidat en Historia Económica, Política i Social [Teaching innovation team in Political, Social and Economic History]

Maggie Carson is a Lecturer in Nursing Studies at the University of Edinburgh and is currently on a part-time internal secondment to the Institute for Academic Development. She teaches at both undergraduate and postgraduate level with a focus on clinical leadership and endocrinology. She is developing an interest in e-learning.

Ivana Čechová, Ph.D. graduated from the Faculty of Arts at Masaryk University with specializations in pedagogy, English and Russian language. She has worked as Head of Research and Deputy Head of the Language Department. Currently she works as a senior lecturer at the University of Defence. In 2010 I completed my Ph.D. degree.

Miloslava Černá is a Lecturer in the Department of Applied Languages, Faculty of Informatics and Management, University of Hradec Králové,
Czech Republic. She has published over sixty articles especially on language portals: structure, services and usability testing. Her other area of professional interest is blended learning: design, motivation, communication and virtual communities in e-courses.

Cheng-ping Chen is a lecturer at the Faculty of Graphic Arts and Communication at National Taiwan Normal University. She is also working as a coordinator for a government-supported augmented reality (AR) research project. Her current research interest is focused on the instructional pervasive gaming development and implementation.

Diana Chihaia is PhD student at University of Iasi (www.uaic.ro), Romania. Fields of research: e-learning, computer supported collaborative learning and team collaboration. She has graduated a master by research program in Ireland on technology enhanced learning, was involved in Adaptive Learning Spaces research project and now works as specialist on teacher training in ICT.

Konstantinos Chimos is currently pursuing a Ph.D degree in development, evaluation and optimization of e-learning applications using project management techniques and educational design, at the University of Piraeus, Piraeus, Greece. He holds an undergraduate degree in Electronic Engineering (IT) and a Masters degree in Advanced Information Systems from the University of Piraeus. His research interests include web services, network services and software engineering.

David Comiskey is a lecturer in Architectural Technology at the University of Ulster. He is passionate about the use of technology in education and was recently awarded an innovation in teaching and learning award for excellence in embedding the use of technology in teaching and learning.

Carmen Mihaela Cretu is professor PhD at University of Iasi Romania. Fields of research: giftedness, curriculum methodology, innovative technologies in education, policies of education, comparative education, education effectiveness. She works as: an international expert for European Commission, DG-Research; member of Romanian National Board for Teacher Training; President of RO-Talent Association.
Marija Cubric is a reader in e-learning at UH Business School, where she teaches information systems and project management related subjects. She has a PhD degree in Computer Science and MA in Learning and Teaching in Higher Education. Her research interests include application and evaluation of innovative e-learning designs.

Katja Derr worked several years in the field of media production and screen design. After completing a degree in education at Freiburg University of Education, she became research staff member at Baden-Wuerttemberg Cooperative State University Mannheim, where she is working on e-learning and e-assessment tools to foster students’ basic knowledge in mathematics.

Dr. Anne Dickinson works with the e-Learning Unit of Coventry University, UK. She has been involved in an international project, e-TALIA, funded by Leonardo Transfer of Innovation from 2010 to 2012. In the summer of 2011, Anne was Visiting Fellow at the University of Windsor, Ontario, Canada where she worked with colleagues in the Centre for Teaching and Learning. She was presented an Equality and Diversity Award by a panel of judges in Coventry University in 2012.

Fan Ding has a dual master degree from Stenden and London Metropolitan University. She is a lecturer of Strategic Management at Media & Entertainment Management faculty, Stenden University of Applied Science. Fan has started developing interests in Social Media and E-Learning guided by dr. Jim Slevin. She is looking forward to a challenging PhD journey ahead.

Jiří Dlouhý works as a head of Environmental Education Department of the Environment Center of the Charles University in Prague. His research is oriented on modern Web 2.0 tools in environmental education and in education of problems of sustainable development.

Jane Eberle is an associate professor in Instructional Design and Technology at Emporia State University, USA. She previously taught elementary school for 15 years and currently teaches Instructional Technology for Educators to pre-service teachers and graduate courses in visual literacy, creativity in the classroom, and integrating technology into the classroom.
Ibrahim Elbeltagi is a Senior lecturer in information and knowledge management at the school of management, University of Plymouth. Ibrahim’s Publications largely related to electronic commerce, adoption of ICT, information systems in developing countries, social networking and knowledge management. I have more than 40 journal and conferences papers published or accepted for publication in many national and international journals and conferences.

Julia Fotheringham contributes to a range of strategic learning teaching and assessment initiatives in the Office of the Vice Principal (Academic). She is a Lecturer in Academic Practice at Edinburgh Napier University and Deputy Programme Leader for the MSc in Blended and Online Education and tutor on the PG Cert in Teaching and Learning in Higher Education.

Dr. Gabriele Frankl is head of the eLearning department at the Alpen Adria-Universität Klagenfurt since 2008. Her main research interests are e-learning and blended learning, knowledge management, win-win constellations and group intelligence as well as self-organisation processes. She has successfully implemented e-learning and knowledge management systems in the production industry.

Zsuzsa Galloway is a Lecturer in Sports Coaching at the University of Wolverhampton School of Sport, Performing Arts and Leisure, in the Department of Sport and Physical Activity where she teaches sports coaching and physical education related subjects. Her research interests include educational technologies, and their influence on learning and teaching in practical environments.

Elaine Garcia is currently Head of Human and Digital Learning Environments at Plymouth College of Art and is also undertaking a part time PhD at the University of Plymouth considering the use of web 2.0 within Higher Education. Research interests include web 2.0, teaching and learning, technology enhanced learning and social media.

Dr. Maria Goga is online lecturer for HFU University affiliated to Griggs University. She is teaching online courses in US accredited Master and Bachelor levels in the field of education and educational research. Recently she was obtaining an FP7 Unite grant (FP7 248583) coordinated by
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Enhancing Second Language Skills Development Using Students Response System

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Abstract: Effective second language (L2) learning requires that learners take control of learning activities through interaction and active participation because interactivity facilitates L2 learners’ use of the target language in a more authentic communication. This study examines L2 learners’ development of language skills based on the use of personal response system, communicative approach and the traditional lecture method in the ESL classroom. The sample of the study was 99 pupils from three primary schools in Ogun State, Nigeria. Using a quasi-experimental non-randomised pre-test posttest control group design, a battery of English Language Listening Tests and English Language Speaking Tests developed to measure pupils’ communicative competence were used for the data collection. Paired samples t-test, Analysis of covariance and multiple regression analyses were used for the data analyses. Findings revealed that, there exists a significant difference between the pre-test and post-test language skills development scores of pupils in each of the groups. Moreover, the results also indicate that, across the groups, there was a significant difference in pupils’ post-test language skills development scores based on the teaching strategy. Multiple regression analysis results revealed that it was possible to explain 86% of the variance of pupils’ language skills development by a combination of the independent variables. Speaking skills was the potent contributor to the prediction of pupils’ L2 skills development, while gender and pupils’ attitude to English language lesson did not make significant contribution to the prediction of pupils’ language skills development in ESL classroom.

Keywords: active learning, second language, SRS-communicative approach, peer discussion, Nigeria
The Role of Smart-Board in Improving English Language Skills in Jordanian Universities

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Abstract: This study aimed at investigating the impact of CALL strategy (Smart-board) on public and private universities students' achievement in English. It attempted to answer the following questions: What is the effect of using Smart-board on writing compared with conventional method? What is the effect of using Smart-board on reading comprehension compared with conventional method? What is the effect of using Smart-board on listening compared with conventional method? What is the effect of using Smart-board on speaking compared with conventional method? To answer the questions of the study, the researcher used a program based on CALL (Smart-board) for the experimental group. Thirty students in two universities at English department were purposefully chosen in the 2nd semester of the academic year 2012. The participants of the study consisted of two assigned sections. The experimental group was taught according to Smart-board; while the control group was taught according to the conventional way. The researcher prepared general achievement test as the instrument of this study. To establish the validity for the test, the method of content validity was used. The results revealed that the students' achievement of writing, reading, listening and speaking in the experimental group significantly improved.

Keywords: computer-assisted language learning, smart board, computer-mediated communication, English achievement
Teaching Diplomatics in 2.0 Web Environments: An Innovative Experience to Promote Interaction Among Students From Different Countries and With Different Learning Needs

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Abstract: This paper aim to present a project about the use of a virtual learning environment for the teaching of Diplomatic using digital technologies. The learning activities were part of a Master’s course in Library science, Archival Science and Research Methodology at the Federico II University of Naples in 2011 which is a post-degree course and for aspiring or young archivists. Technologies from two projects that have been running separately in recent years were used in an integrated way. One is Rete@ccessibile which gave rise to the Moodle platform of the same name (www.firbreteaccessibile.it); the other is Monasterium.NET (www.monasterium.net) which uses Web 2.0 using an environment known as MOMCa (www.mom-wiki.uni-koeln.de), and a tool called EditMOM, set up especially by the University of Cologne for the management of medieval charters. The teaching activities at the University of Naples were organized as part of the European ENArC project (European Network on Archival Cooperation) of the Culture Programme 2007-2013 involving the Department of History of Federico II University, Naples, and numerous institutions from various European countries (www.recruitdigitaldoc.org). The project involved also a large international working group made up of teachers of diplomatics and palaeography who in recent months have been assessing the possibility of organizing a distance learning course for the same discipline, but of an international nature.

Keywords: virtual learning environment, diplomatics, medieval charters, university teaching, Web 2.0
Experiences With use of Various Pedagogical Methods Utilizing a Student Response System

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Abstract: This paper describes use of an online Student Response System (SRS) in a pre-qualification course for engineering studies in Norway. The SRS in use, where students answer quizzes using handheld mobile devices like Smartphones, PADs, iPods etc., has been developed at Sør-Trøndelag University College. The development of the SRS was co-funded by the Lifelong Learning Program KA3-ICT in 2009-2010. SRS has been designed to help teachers effortlessly i) break the monotony of a lecture and allow the students to actively take part in the lecture, ii) increase teacher-student interaction, and iii) give teacher and students immediate anonymous feedback on learning outcome. The response system was used in mathematics in two groups with different lecturers during two semesters in 2009-2010. The pedagogical methods in use will be referred to as “Peer Instruction” and “Classic”. In each method the students will answer a multiple choice quiz using their mobile devices. In both cases the result of the quiz will immediately appear as a histogram on a screen in the classroom. The closing parts will also be identical. The lecturer then highlights the correct option in the histogram and explains why this option actually is the correct one. In the Peer Instruction method there will be an additional element. The first poll will be followed by a discussion in student groups, where the students are urged to defend their choice and convince their fellow students that their chosen option is the correct one. The discussion is then followed by a new individual voting session before the final results are shown and the closing part takes place. The paper will compare this method with the peer instruction method as described in existing literature. The learning outcome will be discussed according to interviews with students and the lecturers’ experiences from the classroom. We will present results showing that when students are arguing their point of view, they will have a stronger tendency to convince their fellow students when they themselves already have found the correct option in the quiz. Finally we will suggest pedagogical improvements for future use of response systems in mathematics. Input from lecturers and from students has already been used in the process of developing a new version of SRS, expected to be finished autumn 2012.

Keywords: student response systems, mobile learning, smartphones, peer instruction and learning, peer learning assessment systems
Why and how Academic Staff Adopt e-Assessment in a Higher Education Institution (HEI)

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Abstract: Much effort goes into developing the technology for an efficient and easy to use electronic assessment system, but successful implementation depends as much, or even more, on understanding campus culture and using appropriate change strategies. The Centre for Learning and Teaching Development set up an eLearning strategy in which capacitating academic staff on e-learning is one of the objectives. In line with this strategy, the centre conducts eLearning workshops for academics that are interactive and integrate classroom practice. These workshops concentrate on how to use Blackboard as a Learning Management System (LMS) and one of the areas covered is designing e assessment tasks in Blackboard and Respondus. Such workshops are followed up by monitoring and providing long term support. The question then is whether the lecturers adopt e assessment in their various courses and how faculties support or monitor the e assessment practice. This article examines the issues and barriers that inhibit academics from using e assessment system. It uses the Roger’s diffusion and adoption theory as a means to understand and explain how individuals and the institution react when an innovation is introduced into their environment. The rate of adoption of innovations depends on relative advantage, compatibility, trialability, observability and complexity. Adoption increases if adopters can see the results of the innovation. The study specifically measured the extent of adoption of e-assessment by academic staff and identified their reasons for adoption. The study was conducted with academic staff that was trained in e learning and e assessment. A questionnaire was sent out to collect data and SPSS was used to analyse data. Findings show that various factors lead to early adopters, pragmatists and laggards in the adoption of e-assessment. A major contributor to this lack of adoption was unreliable internet and policies. This study suggests certain steps that can be followed to implement e-assessment effectively.

Keywords: change, innovation, e-assessment, adoption
Interactive Feedback in Virtual Learning Environment - Video-Skills

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Abstract: During the learning process, understanding some specific topics of the subject’s programme may present great difficulties. The solution to these problems may be more complex in a virtual environment if you just opt for strictly written feedback. Several actions are proposed in order to respond to this situation in a flexible way and to achieve three main objectives: (1) Defining the appropriate interactive tool to answer the questions proposed, according to the typology and characteristics of the question. (2) Elaborating answers in a more visual format to improve the comprehension by the students. (3) Making of a repository video with the answers based on the questions raised by students. For our purpose we’ve selected what we considered technology enhancing learning (TEL) tools. These are: video edited with Video Edit Magic (1), commented screencaptures with CamStudio (2) and commented video with screen-flash (3). The pilot test was carried out in various subjects at the Faculty of Economics and Business, of the Universitat Oberta de Catalunya. Specifically, this innovation has been applied to three subjects Statistics Essentials, Behaviour of Economic Aggregates (BEA) and Analysis of Financial Statements (AFS). For each subject we’ve chosen the tool that fits better to the learning process and content of every one of them. In all cases, the usefulness of the tools used in the pilot has been positively evaluated by the students. In general, we can conclude that the video feedback versus written feedback improves the development of the students’ learning process.

Keywords: learning methodology, eLearning, ICT, feedback, video feedback, personal feedback in large groups
Do we owe Them? The Impact of eLearning on Disadvantaged Communities

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Abstract: We’ve shifted to an age of a world run by little bits of data: ones and zeros that control what we see and how we learn. While there are tremendous theoretical benefits to eLearning, the detriments cannot be overlooked. This theory-based paper will examine the challenges facing educators utilizing a variety of modes of eLearning, and the need to address the uneven playing field that disadvantages 15% of Americans living in poverty, and 20% of Americans with disabilities. The United Nations defines poverty in part as being unable to attend a school, and lacking the ability to be capable of participating in society. Approximately 22.5% of the developing world’s 2008 population lives in poverty. If we examine these statistics a little closer to home, we see that developed countries also face poverty, on a smaller scale. In the Netherlands, the CIA indicates that in 2005, 10.5 of the population lived below the national poverty line, and in 2010, in the USA, the level was 15.1%. Students attending poor and high-minority schools have less access to technology, yet for many grade levels, the minority groups of students report a daily usage of computers. A dilemma arises between interest and ability. Over the years, there have been many pedagogical pattern shifts behind classroom content delivery. The impact of eLearning seems to be an enabling factor for whatever method the teacher chooses to use. There are no longitudinal studies done related to research in technology usage for the education sector, because the technology changes daily. Successes or failures are shown, related to specific technologies, such as wikis, blogs, and webcasts, but the diversity of the internet has changed the educational landscape. When examining eLearning, the utilization of technology to support the learning process, it becomes painfully clear that the ‘haves’ have more and the ‘have-nots’ have less access to technology. Within this paper, the impact of eLearning on segments of society will be addressed.

Keywords: eLearning, education, disadvantaged communities, minority, ethics
Using Peer Assessment and Electronic Voting to Improve Practical Skills in Masters Students

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Abstract: The authors describe the use of Electronic Voting Systems for the peer assessment of multimedia artifacts in order for students to internalize the criteria examining good visual design, usability, robustness and information architecture. Masters level students following a module in Multimedia Specification Design & Production, present their artifacts to the group, and mark previous cohorts’ artifacts. We argue that the “live” nature of such peer evaluation causes a profound level of reflection in the understanding of the criteria as well as calibrating individuals’ responses to those of their tutors and peers. We therefore believe it is likely to be even more effective than traditional peer assessment. In this paper we present data to support the efficacy of the approach. We also make tentative conclusions in terms of effect on student attainment as well as some suggestions of the cognitive processes triggered by such methods.

Keywords: peer assessment, electronic voting systems, multimedia design

The Role of Computational Thinking and Critical Thinking in Problem Solving in a Learning Environment

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Abstract: For the last three decades a great deal of research has been committed to problem solving. Wherever numerical problems are involved from the simple 2 + 3 to complex numerical analysis, technological tools (from a simple calculator to sophisticated computers) have been developed to assist the problem solver to deal with the problem effectively and efficiently. Gone are the logarithmic tables and slide rules. However, it is the human mind in the end that has to be applied in a problematic situa-
tion and solve the problem. Its capacity to solve the problem is directly related to the knowledge stored in the mind. Knowledge is the product of thinking. But thinking can vary from a very simple and mundane thought to a very sophisticated and complex one (McPeck, 1981). The nature of the problem dictates the level of thinking. Higher-order thinking can be conceptualised as non-algorithmic, complex mode of thinking that often generates multiple solutions. Such thinking involves uncertainty, application of multiple criteria, reflection, and self-regulation. On the other hand, lower-order thinking could be considered to be one that requires minimum cognitive effort and it is algorithmic. In an attempt by humans to duplicate the power of the mind, Herbet Simon saw thinking as information-processing (McGuinness, 1993) resulting in computers taking over in a manner of ‘thinking machines’. McGuinness (1993) also saw thinking as making judgements and sense-making. Making judgements is directly related to critical thinking. Critical thinking has its roots in the ancient Greek philosopher, Socrates, who perfected the art of questioning, who, by asking pertinent questions he would show that “people could not rationally justify their confident claims of knowledge”. The importance of critical thinking is one of the seven educational critical outcomes together with problem solving a notion supported by many authors (Halpern, 2003; Pascarella & Terenzini, 1991; Brookfield, 1987; Martinez, 2007; McPeck, 1981; Williams, 2005). The complexity of critical thinking is evident from the fact that there is no definition that is universally accepted. However, a great number of critical thinking skills have been identified and agreed upon by many authors. Some of these skills are: analysis and synthesis, making judgements, decision making, drawing warranted conclusions and generalisations. Critical thinking is thus considered as a prerequisite to problem solving. However, when computers are used in the problem solving situation, the need for computational thinking is another pre-requisite. Computational thinking has been coined by J. Wing (2006) and broadly speaking it describes a set of thinking skills that are integral to solving complex problems using a computer. The relationship between computational thinking and critical thinking, two modes of thinking in solving problems has not yet been established. This paper aims at shedding some light into this relationship.

**Keywords**: computational thinking, critical thinking, problem solving, learning, knowledge creation
New Approach for Virtual Master’s Final Projects: Didactic Guidelines for Students and Tutors

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Abstract: Today, in Master’s programs, there is the need for scenarios that encourage holistic assessment of knowledge and skills achieved by students to be more integrated and applied. In this sense, we believe that the Master’s Final Project (MFP) could be a key strategy when developing knowledge, skills and abilities, as it allows the combination of diverse understanding and its explanation. At the same time, the MFP provides specific evidence of student achievement, which will help skills development, such as its accreditation. The project we are presenting, called “Developing and Evaluating Competences through the Master’s Final Project”, aims to identify and evaluate key elements that facilitate the student’s skills development through the MFP, when it is carried out and assessed completely in a virtual learning environment. Our goal is to propose an MFP methodological model for virtual learning environments, by developing three specific tools to guide both teachers and students throughout the process. These are: A multimedia guide for students, for developing a MFP in a virtual learning environment A multimedia guide for tutors, for MFP mentoring and assessment Methodological guidelines for MFP virtual defense This project conducts empirical research, from a qualitative perspective. However, we have integrated both quantitative and qualitative tools and strategies. The research project focuses on three fields of knowledge: Education, IT and Social Sciences. The research techniques used so far have been as follows: Documentary analysis: We have analyzed the documentation from three MFPs (teaching plans, activities, monitoring, feedback, assessment criteria, etc.) Group interviews: We have carried out three group interviews with different faculties and MFP coordinators from all three fields of knowledge Although there have been some face-to-face meetings, most of the research process has been carried out through Web 2.0, taking advantage of the opportunities offered by this environment. This makes it easy to be flexible about the scope and the depth of a team member’s participation. As we have not finished the research project yet, the results that we present in this article are preliminary and partial, although they are a significant first step. The results focus on the identification of the key as-
pects of the virtual MFP process for developing and assessing student’s competences. When we know the opinion of tutors and students, by analyzing the questionnaires, we will review the current proposal and complete it, in order to fit it to students and tutors expectations and needs.

**Keywords**: master’s final project, virtual teaching, virtual learning, competences assessment, Web 2.0

**Materials Development in Language Training: Online Course of Military English**

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**Abstract**: Teachers rely strongly on a variety of materials to support their teaching, e.g. from commercial textbooks, magazines, newspapers, Internet and videos. However, despite the current immense array of English language materials commercially available, a large number of teachers produce their own materials to assist their students to acquire and retain knowledge, skills and vocabulary. New materials are crucial to building motivation, getting students more involved in learning activities, and providing them with relevant knowledge and skills. Adult learners especially prefer materials which reflect their own difficulties and needs and provide something beneficial to them. As a highly specialized institution, the University of Defence promotes original online courses to give students a chance to study and practice their language skills regardless place and time restraints. In the academic year 2010-2011 the authors analysed a University of Defence language learner’s profile by establishing baseline data on technology use. The objective was to find out if our students prefer to use up-to-date technologies or to be taught in a traditional way; furthermore we wanted to know students’ preferences, wants and needs while using technologies in the language classes as well as their suggestions dealing with the online course content. On the basis of research findings and the respondents’ suggestions, the authors, with the help of students, developed an online course of military, management and economic terminology, designated for both bachelor and master degree students. The course comprises highly specialized modules and topics developed by using authentic texts and tasks. Each topic contains several texts with a number of
activities focused especially on reading and listening skills, vocabulary and grammar. The majority of exercises are interactive. The paper presents the research findings and the process of developing the new online course, the course description, content, and the first experiences recorded over a sustained period of time, as well as the potential future of this form of language training.

**Keywords:** online course, material development, language training, authentic text and task, interactive

### Social Software Applications and Their Role in the Process of Education from the Perspective of University Students

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**Abstract:** The core of the contribution stems from the survey on social software applications and their satisfaction with them. The survey was conducted at the University of Hradec Králové within the framework of large research projects. Data from more than 300 respondents were collected and processed. The goal of the research was to map utilization of selected social software applications networking systems among university students. Two main sub-goals were to find out what the awareness of social networking systems among our students is and in case they know the software application what is their level of satisfaction with it. A statistical view on factors influencing utilization of social applications might be useful as a starting point to a follow-up research. Since 2009 the University of Hradec Královec research team has solved a project 'Evaluation of the modern technologies contributing towards forming and development university students’ competences' which numbers among projects of the Czech Republic grant national agency (GACR). The project focuses on examining the issue whether the appropriate implementation of eLearning into university education provides a positive contribution to students’ attitudes towards the process of instruction, influences developing students’ key competences, and whether it leads to comparable students’ achievements in the area of their cognitive process. This paper on social software applications claims to contribute into a rather vast field of implementation of infor-
mation and communication technologies (ICT) into the process of education. Approaches to the use of ICT in academic related work span from fully optimistic and positive approaches to rather pessimistic even sarcastic. A positive approach to ICT still prevails in 'academic papers'. The approach to ICT is usually elaborated from three aspects, pedagogical, social, and technical. Their ratio varies according to the focus of the contribution. The most common positive attributes of ICT in the process of education are: modern, open, enormous potential, rich in motivation, creative, revolutionary, productive or challenging, enabling systematic work. The process of instruction supported by ICT is considered suitable and beneficial for learners of all learning styles. Tools and activities offered in the environment where the process of instruction is supported by ICT are highly positively assessed because they enable tailoring the process of education to any learning style. When the social aspect is taken into consideration other distinctive strengths get revealed we mean the development of one’s identity within the framework of social network self-presentation, communication and interpersonal relations in virtual space. On the other side there is also a distinctive critical approach. N. Selwyn presents her rather sceptical view of the potential of computer technologies in her research. In spite of the fact that the potential of computer technologies to revolutionize university teaching and learning has long been celebrated, reality is completely different. This paper on social software applications contributes to the field of tertiary education bringing findings from the investigation of three key parts which are significant in the process of education: study materials, ways of communication and testing options.

**Keywords:** social software application, eLearning, satisfaction, survey, higher education
How to Design and Implement a Validation Methodology for Virtual Educational Games

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Abstract: The present paper describes the empirical validation of rePlay, a 3D game used as an instrument for psychological counselling for children with a low level of antisocial behaviour (ASB). This research was developed during a FP7-ICT project, by an interdisciplinary team including professionals working in academic, IT and educational tools’ industries from public and private sectors. The validation process of the rePlay game was focused on two tracks: a) the software and hardware components used by the players to get through the game’s tasks and levels and b) the educational contents of the game. During designing and implementing the research plan for rePlay’s validation we used a mixed methodology based on “triangulation”. Both quantitative and qualitative approaches were considered in order to get as many details as possible regarding users' experience during levels' and tasks' accomplishment. There were two large groups of participants involved in this study: primary users, representing children with a low level of ASB and secondary users, representing psycho-pedagogical counsellors (called experts from this point on) working in specialized centres from three European countries: Romania, Spain and the United Kingdom. The primary users were segmented based on two variables: age (two groups of 10-12 and 12-14 years of age) and gender (girls and boys). According to the methodology, the following dimensions were considered for assessment: physical effects, optical and visual effects, sound effects and music, operation and interaction, consistency of the game, helping content, playability, game’s challenges for users’ skills, clear goals, feedback, control and immersion, and the educational content. The whole process was based on the refinements made after several assessment sessions deployed within schools and specialized counselling centres. The results obtained after the first testing session (FT), compared with those obtained in the second testing session (ST) are presented in a more detailed manner in this paper. Finally, the counsellors agreed with the fact that the game facilitates expert - child communication and creates a stimulating atmosphere for conversation on the educational key issues. Regarding the usability and ergonomics of the game, the results show that there were signifi-
cant improvements regarding the game's hardware and software components between the two testing sessions. The results were used to finalize the game as a whole, including the software, hardware and educational content. Now, the final version of *rePlay* game is available for current usage in counselling centres within schools.

**Keywords:** games, counselling, educational content, validation

**An Evaluation of Online Distance Learning Programmes Through the Lens of Students’ Expectations**

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**Abstract:** As the University of Hertfordshire (UH) moves towards its goal of 15% distance learning by 2015, it has become increasingly important to gain a deeper understanding of the needs and expectations of our growing population of distance learners, and how these compare to the institutional agenda. The purpose of our research is to analyse and compare student, staff and institutional views and expectations of distance learning programmes in three different Schools: School of Law, Business School and School of Computer Science. The study reported here was aimed at gaining greater understanding of student expectations of online distance learning. Findings from this study support literature in the field with regards to the importance of flexibility and time-management for online distance learners, but they also indicate some additional implications for learning designs and institutional processes related to Online Distance Learning (ODL), such as further customization of learning designs for specific types of learners, increased ‘tutor presence’ and more opportunities for social inclusion of distance learning students into the wider university.

**Keywords:** higher education, online distance learning (ODL), learning design, teaching presence, social presence, students’ views
University Preparation via Self-E-Assessment and Self-Study: First Findings and Implications From Evaluating an eLearning-Platform

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Abstract: Over the last years numerous efforts have been made to interest German adolescents in picking up engineering studies. While these efforts are slowly beginning to show an effect (increasing number of first year students), drop-out rates in engineering are rising. Not all students are equally prepared for their courses of study and not all are aware of the relevance of basic skills in mathematics. Once university courses have started, it is very challenging to meet demands and at the same time close gaps in secondary school knowledge. Thus mathematics, though not being the main interest of future engineers, can become crucial for studying successfully. In order to raise awareness to the importance of mathematics at an early state, Baden-Wuerttemberg Cooperative State University Mannheim offers an online self-assessment for prospective engineering students. It can be taken several months before the actual courses of studies begin, so that existing gaps in knowledge can be addressed in the remaining time. After completing the test students are provided with electronic feedback and, if applicable, forwarded to learning modules they can work on. Both self-assessment and learning material are structured and categorized in the same way, totalling ten mathematical subject areas. During the first week at university a second assessment is conducted and students that still have gaps in some mathematical areas are advised to visit additional tutorials. Along with the second assessment goes a questionnaire concerning the individual use of and satisfaction with the learning material. The first data analysis revealed that participants not only differ in their range of knowledge, but also in their motivation and ability to learn self-directed. While nearly all students were highly motivated to self-assess, not all could keep up this motivation in the self-study process. Especially students with lower math grades at school, and therefore maybe less basic knowledge, often failed to improve while students with good school grades not only performed better in the first assessment but could im-
prove much more between the first and second assessment. The article summarizes the findings of both e-assessments and use of e-learning material and discusses questions that arose from the evaluation. Some of the findings were used to adjust the e-assessments’ design and to optimize the learning material, others revealed the need of additional research. As the overall group is very heterogeneous and therefore difficult to address in their individual needs a main focus in the future course of the project will be on finding out more about the students’ interests and learning objectives and how they might be fostered. A Glossary of terms is also at the end of the paper.

**Keywords**: e-assessment, self-assessment, self-study, mathematics, engineering

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**eLearning and Social Media in Higher Education**  
**With an Interactional Approach**

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**Abstract**: This paper examines the way in which social media as an eLearning media is transforming the nature of social interaction in higher education. The radical societal transitions especially vitalised by networked communication technologies have produced formidable challenges to educational organisations. In particular the rise of social media challenges existing forms of teaching and learning but also offers a way to transform education. Technological means can facilitate new possibilities to enhance lifelong learning. Yet, eLearning remains approached passively and hardly escapes from its formality. Technologies do not provide magical solutions to eLearning encounters; it depends on how people and organisations make use of them effectively to add value to learning communities. Social media as an eLearning communication media provides unique characteristics for interactional orientations. How can formal learning capture some of the success of informal and non-formal learning via social media? To understand the way social media is used and its nature, the interactional approach as the communication theory is applied. This paper also recognises the value of active learning rather than traditional instructive teach-
ing, and finally to demonstrate the explanatory power of this understanding by looking concretely at a case of non-formal eLearning via Facebook.

**Keywords:** social theory, eLearning, social media, interaction, non-formal learning

**Wiki Strategies for a More Participatory Learning Environment in Czech Education**

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**Abstract:** The authors analyze some principles of education in an open virtual space and compare the advantages and disadvantages of having one’s own installations of wiki software in comparison with using Wikipedia in university education. They analyze the basic principles of Wikipedia and the relevance of this publication media in university education. Alternative modes of using Web 2.0 tools are offered are discussed, as well as some additional functions that having one’s own installations of wiki software can bring to the educational process. The research focuses on a definition of criteria that would help determine in which cases it is advisable to use Wikipedia and in which cases it is suitable to set up your own wiki. Several examples for using both approaches are mentioned, based on the authors’ own experience of more than 8 years working with Enviwiki or VCSEwiki, which are used for environmental education and education for sustainable development in the Czech university network or as part of international cooperation in education for sustainable development through eLearning. Reflection on the use of Wikipedia or local installations of Wiki for the creation of a knowledge base for university teaching and/or support for writing skills and the development of competences, such as collaborative work in the learning process, is focused on potential shifts in the process of education related to the change of mode of communication, the roles of teacher and student, etc. The authors argue that a transition towards a more participatory educational environment might occur in relation to necessary innovations in educational methodology in VLEs (based on Web 2.0) that would be followed by a shift in learning methods (towards more participatory and active ones). Using different genres in Wiki
based publishing is explored and discussed in relation to academic requirements relating to writing quality.

**Keywords**: Wikipedia, Wiki, eLearning, social learning, writing skills

**If you are not Modeling Good Teaching, you are Teaching Something Else: The HUCC Model of Teaching**

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**Abstract**: While many of us were brought up with the admonition by our parents to, “Do as I say, not as I do,” this, in actuality, does not constitute effective teaching. Instructors in higher education, however, are often guilty of providing excellent resources and discourse on effective teaching but fall back on old habits when are teaching that are in conflict with what they have instructed. Confusion ensues. The HUCC Model for Teaching provides instructors with a map for including the following components for effective teaching: Heutagogy or self-determined learning. Rather than using a single-loop model of learning in which the learner identifies a problem, takes action, produces an outcome, and then begins again with a new problem, double-loop learning encourages students to reflect on their learning and to assess how it has changed their beliefs and actions and how they can apply what they have learned to other areas. Teachers become facilitators, not as leaders who sit back and let the students “discover” their learning but as leaders who provide appropriate guidance, resources, and models. Universal design for learning (UDL). This encompasses the idea of the architectural term, universal design, in which products that may have been designed for a certain population may, in the long run, be a design that is used by a diverse population. UDL uses this same theory as applied to education. We need to provide not only equal access to materials but equal access to learning. Creative thinking and problem solving. The move from the Information Age to what Pink (2006) refers to as the Conceptual Age calls for learning that engages students in deeper understanding of how to think through problems and produce solutions. Collaboration. Using Clark’s tenets for teamwork as a basis for using the above theories in ways that students become accountable, effective team
members. By encompassing all four components, instructors can model inclusive, reflective teaching that will provide students with skills that fit into the 21st century’s needs for education.

**Keywords:** collaboration, conceptual age, double-loop learning, heutagogy, universal design for learning

**Peer to Peer: The Full Cycle: Investigating Online Peer Assessment Through Action Research**

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**Abstract:** The value of peer assessment lies in its potential to offer meaningful and engaging learning experiences to students through their involvement as active participants in marking and feedback (Falchikov, 2005). However, the design and facilitation of peer assessment schemes can be difficult to get right. This paper describes an action research project addressing the question ‘How do students experience high stakes peer assessment in an online environment?’ in the context of a fully online Masters-level programme in Blended and Online Education at Edinburgh Napier University. The programme is designed for educators with course tutors participating as co-learners at relevant points in individual modules. In a series of semi-structured interviews we used the ‘emotional touchpoints’ method (Dewar et al, 2009) to investigate participants’ experience of producing and receiving peer marks and feedback on the module’s student-led seminar assignment across two iterations of the module (2011 and 2012). We have concluded that students bring commitment and a strong sense of responsibility to the practice of peer assessment but that it can be a daunting process even for experienced educators. Consequently, thoughtful design of the process at every stage, together with careful preparation and ongoing support for participants is essential in order to address concerns and channel students’ energy into productive aspects of the practice. We have also realised that it is challenging to embed the role of tutor as a co-learner in the context of peer assessment. Simply telling students about the role of the tutor as co-learner has proved insufficient in promoting clarity and understanding as to what this role actually represents in a peer assessed activity. We believe that by providing opportunities for
participants to engage with the idea of tutor as co-learner through explanation, dialogue and other pre-assessment activity, students will come to recognize and value the distributed expertise that resides across the peers, tutors and self.

**Keywords:** peer assessment, peer review, action research, emotional touchpoints, tutors as co-learners

## Online Exams: Practical Implications and Future Directions

**Gabriele Frankl and Sofie Bitter**
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**Abstract:** Teaching is continuously adapting to the needs and requirements of digital natives, but testing is generally conducted in the same, antique paper-and-pencil way. While oral exams outclass written exams from a qualitative point of view, paper-and-pencil exams have no serious advantage over online exams and even hinder the testing of student knowledge properly, particularly if it was acquired via in-class software programs. Written exams also generate large workloads, particularly in classes of hundreds of students as is often the case for mandatory courses in the initial phases of education. Furthermore, the great advantage of answer readability is assured for open-text-questions even if smaller numbers of students are involved. A “secure exam environment” (SEE) is presented in this paper which was developed in response to the circumstances noted above, as well as the financial difficulties associated with acquisition and maintenance of a large-scale computing facility. The system was inaugurated in June 2011 and students now have the possibility of taking online exams with their own devices while, at the same time, being prevented from accessing locally-stored files or non-specified Internet pages. It is also possible to integrate tools that have been used in class. By the end of May 2012 we had conducted 47 such online exams with 1075 students, and are currently able to test up to 70 students consequently. Further developments to the SEE are planned for synchronous and concurrent online testing of approximately 200 students. One aspect of this paper therefore draws on practical experiences gained through the implementation of this flexible solution for online testing at the Alpen-Adria-Universität Klagenfurt.
(AAUK). In experimenting with the SEE we also conducted a survey among participating students which revealed their general attitudes, concerns, technical obstacles and suggestions for improvements regarding online exams. Our findings include several implications for modern online testing and successful implementation of online assessments in a university environment. This paper thus discusses the current status of online exams and associated didactic implications; outlines SEE functionalities including issues of security, safety, privacy and organizational features; and discuss our survey research results in consideration of future research directions.

**Keywords**: online testing, secure exam environment, moodle, security, privacy, survey

The Changing Roles of Staff and Student Within a Connectivist Educational Blog Model

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**Abstract**: Whilst the use of web 2.0 tools and specifically blogs is becoming increasingly popular within Higher Education (HE) and has been shown to promote learning (Garcia, Brown & Elbeltagi, 2012) relatively little is known about the manner in which such tools may affect the roles of both staff and students within teaching and learning. It is within this context that connectivism, a learning theory for the digital age, provides a model through which the roles of staff and students when using collective student blogs for teaching and learning can be considered. Within this research a case study of a collective student blog project, undertaken by students based within an HE institution, is utilised to explore the changing nature of the roles of both staff and students through a connectivist-learning model of blog usage. From this case study it would appear that connectivism does provide a sound theoretical model for the way in which staff and student roles may change as a result of the use of blogs within teaching and learning. However the experience of staff and students who undertook the project suggests that whilst a number of elements of the connectivist model can be identified, these are not seen universally amongst all students. Where a connectivist model of learning through blogs can be seen to be
effective, staff were considered to be able to be more constructively critical in their feedback whilst being less directly involved in formative feedback to the student, which was welcomed by staff. Students meanwhile also considered benefits to exist and these largely related to the manner in which students were able to provide and receive peer review and feedback in a more critical and constructive way than they had before, seeing the benefits this could provide. These benefits were however dependent upon other group members also responding in a timely and constructive manner.

**Keywords**: blogs, connectivism, higher education, changing academic staff roles, changing student roles

**Training e-Tutors in Romania: Validating the Theory**

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**Abstract**: In the previous years we reported (Goga, 2007, 2008, 2010, 2011) our findings regarding the e-tutoring activities in Romania - as compared to the international practices - and our conclusions and recommendations resulted in a Module developed for the e-tutor training for the specific Romanian context. The work was based on a comparative study with participants from different universities in Romania, West Europe, America, Asia and Australia. All the work was summed up in the PhD thesis of the author of this article (Goga 2010). However, one should note that our previous reported work, which was based on quantitative/qualitative studies, literature research etc., that led to the theoretical formulation of this training module, missed the practical validation of the module, because of time and resource limitations. As a follow-up study of the PhD research, an FP7 Unite grant (www.unite-europe.eu) was granted. As a result a module was designed and it was given under the form of a training to a group of about 20 Romanian students carefully selected in order to prepare them to become online teachers. The work presented in this article complements the previous reported works by validating, through a combination of qualitative/quantitative studies with the participants of the course, the theoretical ingredients of the module for the Romanian e-tutor training - presented in the previous study (Goga, 2010).
Keywords: eLearning, training module, roles, competencies, psychology, pedagogy

How are Web 2.0 Technologies Affecting the Academic Roles in Higher Education? A View From the Literature

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Abstract: The aim of this paper is to explore the peer-reviewed literature to determine what is currently understood about the practice of teachers in Higher Education in relation to Web 2.0 learning technologies. There is a wide range of literature dealing with case studies and evaluations of innovative teaching using the affordances of Web 2.0 and among teachers interested in e-learning, and educational research papers, we would expect a strong integration of these technologies in the development of student-centred and constructivist or constructionist teaching. Web 2.0 is fundamentally participative, encouraging the sharing and co-construction of information and learning. The opportunities for experiential and discovery learning are increased through tools such as social networking, virtual communities and professional forums, collaborative and self-publishing applications. In order to make the most of such tools, faculty need to stay up to date, and engage in Web 2.0 applications personally in order to anticipate how best to integrate the potential of this paradigm into their learning designs. Naturally, faculty start at different points of interest, competence and engagement with Web 2.0. But given the increased institutional pressures to invest in blended/hybrid and online learning, Higher Education (HE) teachers are increasingly headed towards a changing interactive environment in which their values, their identity and their teaching practice are challenged. The initial step in understanding these challenges is to see what current academic literature has to say about them. This paper sets out a systematically collected review of conceptual discussions about the changes HE teachers face in their academic roles as learning technologies impact their design, understanding and delivery of Higher Education. The review is of peer-reviewed journal articles since 2006 because, although the term “Web 2.0” originated earlier, perhaps as early as 1999, it first became a publicly acknowledged term in 2006 when TIME Magazine
nominated the public (“You”) as “Person of the Year” due to the huge impact of user-generated material through sites such as YouTube, Facebook and Wikipedia. 25 peer-reviewed journals were selected for the review and articles identified through keyword and abstract search. The paper attempts to summarise the key themes and concepts associated with changing roles for faculty as they engage with learning technologies to provide a benchmark for professional development research and to engender debate about the HE teacher’s role and the degree to which this may be technologically determined.

**Keywords:** Web 2.0, higher education, academic role, faculty development

**Media use for Learning by Students in Higher Education: An International Survey**

**Michael Grosch**  
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**Abstract:** The web 2.0 has already penetrated the learning environment of students ubiquitously. The dissemination of online information services into tertiary education has led to constant changes in students’ learning and study behaviour. Students use services such as Google and Wikipedia most often not only during free time but also for learning. At the same time, traditional information media such as textbooks or printed hand-outs still form basic pillars in their learning environment. To measure the media usage for learning and how it changes an international long term media survey in tertiary education was set up by the author and other cooperation partners. Until May 2012 about 8,000 students were asked 143 questions about their information media use for learning and close-by topics.

**Keywords:** media, higher education, students, eLearning, web 2.0, ebook
Using Web 2.0 in Teaching and Research: Insights From Trainings and User-Driven Research

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Abstract: Web 2.0 and social software in academia have been an active area of research for many years now. Focussing on collaborative activities, networking, content sharing and user-generated content, they facilitate the implementation of collaborative, self-paced and learner-oriented activities. Next to these pedagogical benefits, the very same tools are also useful for research, e.g. by supporting networking, conducting joint research, exchanging ideas, and organising the work process. However, the discussion is usually pursued from a top-down perspective and does not sufficiently consider the needs of the academic staff in their everyday routines, such as filtering the useful tools out of the vast amount of web 2.0 services, and determining beneficial contexts of usage. This paper approaches web 2.0 usage in academia from two perspectives. First, it introduces training measures on web 2.0 for academics to impart the skills that are required to employ web 2.0 tools. Second, possible applications and effective usages for the academic routine are discussed, drawing on results from the trainings in which participants reviewed web 2.0 tools and set up a compilation of these services for teaching and research. The findings are enhanced by results of a survey conducted after the trainings where participants were asked about their actual use of web 2.0 tools. The paper concludes with a summary of practical web 2.0 tools for academia and a discussion of the implications of web 2.0 uptake for teaching and research.

Keywords: web 2.0, e-teaching, e-research, blended learning, staff development
"Digital Futures in Teacher Education" Project: Exploring Open Approaches towards Digital Literacy

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Abstract: This paper reports the findings of a project "Digital Futures in Teacher Education" (DeFT) undertaken as part of the third phase of the Joint Information Systems Committee (JISC) UK Open Educational Resources (OER) programme. It builds on previous work (Gruszczynska & Pountney, 2012) that has addressed attempts to embed OER practice within the teacher education sector, and that which has informed practice in teaching and learning in the school system involving digital literacy (Burnett & Merchant, 2011; Davies & Merchant, 2009). It examines the effectiveness of a methodology that prizes reflexivity and participation, and includes a range of voices, including children's voices, in the meaning-making process. The paper also offers some recommendations on the basis of early findings of the project. Importantly, the paper offers a framework for digital literacy, drawing heavily on socio-cultural models of digital practice (Merchant, 2011), which have the potential to enhance the teacher (and teaching) while being inclusive of the learner (and learning) and which address the 'why' as well as the 'how' of digital literacy. This framework takes into account, current debates (primarily within UK) focusing on issues of ICT, digital literacy and media literacy in the curriculum, which reflect a tension between of digital literacy as a set of skills and competencies as opposed to understandings that focus more on socio-cultural and communicative practices. This framework builds upon data collected in the context of the project and incorporates meanings and perspectives on digital literacies as expressed by project participants.

Keywords: digital literacy, reflexivity, ICT curriculum, pedagogy, open educational resources
Introducing Blended eLearning Course Design: A Pre-Implementation Assessment of Students’ Basic ICT Skills

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Abstract: In the face of diminishing education budgets in higher education, blended learning has been found to be a viable and effective approach to deliver high-quality, up-to-date, on-demand solutions to developing cross-curricular skills of undergraduates. However, research has also shown that blended learning solutions do not often live up to the potential of the approach or fail to produce the intended results because the students are not always equipped to handle the technical, psychological and organisational challenges of blended learning approaches. This project surveyed seventy-five first year Information Technology Education students of the University of Education, who completed an adapted version of Programme for International Students Assessment questionnaire during a routine orientation before the commencement of academic work for the 2011/2012 academic year. The exercise was to assess the students’ e-readiness for an implementation of a blended course design. SPSS v.16 was used for the descriptive data analysis. Results show that many of the students hold competences with regards to “basic ICT skills”. The government radical policy of embarking on ICT for accelerated development coupled with the reforms in the Telecom sector which began almost a decade ago is yielding positive results as hitherto freshmen and women undergraduates in all public universities were enjoined to undergo a compulsory computer literacy skills training. Even though, these basic ICT skills are necessary for the effective implementation of blended eLearning, we argue that these basic skills are not sufficient in terms of what we call digital literacy in relation to students’ capacity to employ ICTs for their own learning and for general academic purposes. We also argue that there is the need to focus also on relatively more complex skills and competences when judging students’ readiness or capacity to engage with networked or blended eLearning. The results also positions the researchers to embark on blended eLearning course design for the development of students’ cross-curricular skills.

Keywords: blended eLearning, cross-curricular skills, ICT skills, digital literacy
“Why Should I?” Engaging Learners in Digital Literacy Skills Development

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Abstract: In the current digital environment, it is becoming increasingly vital for learners to develop digital literacy skills. The UK’s Quality Assurance Agency for Higher Education (HE) requires graduates to be able to demonstrate digital literacy. Employers consider these skills to be essential in the workplace. Recent changes to the funding of HE by the UK Government mean that the personal cost to the learner is rising dramatically and, as a result, learners themselves increasingly expect UK university courses to demonstrate relevance to the workplace. But despite all this, some learners may not fully engage in digital literacy skills development, instead concentrating on the subject-specific content of their modules. We explore learner experiences of digital literacy skills development in an attempt to understand why learners fail to perceive the relevance of the skills content of their module, or at least give it low priority. The UK’s Open University (OU) is a distance-learning institution. Its Faculty of Health & Social Care (FH&SC) has evolved different approaches to digital literacy skills development using technology-enhanced learning, based on skills resources that are either ‘generic’ (usable within any FH&SC module) or context-dependent and module-specific. Our Evaluating Approaches to Developing Digital Literacy Skills (EADDLS) project is exploring learner perceptions of skills activities and our overall skills development strategy, with data collected from online questionnaires (N=298) and interviews (N=18) involving learners from three modules. This paper presents findings from an analysis of the quantitative questionnaire data, comparing types of skills resources, and approaches to digital skills development in terms of learner perceptions and degree of engagement. We also look at learner perceptions and engagement in relation to the demographic factors gender, age and previous education and explore whether demographic factors influence individual learner preferences for the type of learning design, such as use of generic resources versus contextualisation of skills activities that emphasises the relevance of skills to the subject and/or working practice. Our aims are to identify good practice in learning design and what demographic factors, if any, need to be considered in learning design to support individual learners appropriately, and so optimise engagement.

Keywords: digital literacy, skills, information literacy, ICT, learning design, demographic factors
The Yin/Yang of Innovative Technology Enhanced Assessment for Promoting Student Learning

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Abstract: While more sophisticated and constructively aligned assessment is encouraged to promote higher level learning, it is easier to assess knowledge and comprehension than critical thinking and making judgements (Bryan & Clegg 2006). Managing the logistics and resources required for assessing large numbers of students challenges the ethos of placing students at the heart of the learning process and helping them take responsibility for their own learning. The introduction of innovative technology enhanced assessment strategies contests our understanding of the purposes of assessment and affords opportunities for more integrated and personalised approaches to learning and assessment across disciplines. This paper will examine the design, implementation and impacts of innovative assessment strategies forming an integral part of a collaborative lifeworld-led transprofessional curriculum delivered to cohorts of 600 students in health and social work using technology to connect learners to wide-ranging, humanising perspectives on evidence for guiding practice. Innovative assessment technologies included group blogs, multiple choice electronic or computer assisted assessment (CAA), and an audience response system (ARS) affording combinations of assessment for learning and assessment of learning. We will explore, through analyses of student assessment experiences and student and staff evaluations, how these innovative assessment approaches contribute to effective and efficient blended education enabling students to enhance their practice through promoting and developing critical thinking and reflection for judgement-based practice (Polkinghorne 2004). Secondly, we will debate the yin and yang of contrasting and connecting values associated with the controlled, systematic measurement and objectivity of multiple choice assessments, compared with the formative, iterative and subjective nature of reflective blogging. We will consider relationships between teaching and learning strategies and experiences, breadth and depth of knowledge, passive and active approaches to learning, efficiency and effectiveness, individual and group, multiple choice and discursive assessments, face-to-face and online, on-campus and off-campus learning and assessment experiences.

Keywords: innovative assessment; computer assisted assessment; technology enhanced learning; group blogs; audience response systems
Using Blogs as Assessment Tool in Higher Education: An Experience in the Catalan Higher Education Context

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Abstract: Universities are currently immersed in what is known as the process of European convergence to create the European Higher Education Area (EHEA). Nowadays, competency based assessment is one of the challenges most teachers must face and it requires a shift from the traditional approach towards evaluation based on the accumulation of knowledge. In this context, a research group led by the University of Barcelona and implemented in 7th Catalan Universities. During the research process, students developed a blog in order to express their learning process weekly and to reflect about it. Each blog contribution was tagged basing it on the competences that students reflected about. The tutors assessed the contents of the blogs weekly using ad-hoc software in order to give feedback to their students and orientate their future actions in the teaching practices’ scenario. This paper aims to explore the potential of blogs as assessment spaces for students in the higher education, specifically the objectives are: to analyze the students’ opinion on the use of blog tools in their meta-cognition process during the experience; to know and assess students’ perception about the relevance of teacher feedback during this process; to identify student satisfaction with the methodology and tools proposed during the process. In this paper we focus in the experience implemented on one seventh universities, which implemented the innovation in the subject entitled: “educational management”. It is a one semester long course. The total number of students involved in the experience was 62. The results indicated the majority of students think that the competencies acquired during the course are important for the development of the rest of their university program. They also agree that the experience of using blogs has been useful for their learning process, but they insisted on the importance of the continuous and systematic feedback from the tutor and the necessity to enhance the peer feedback between students and students. We can conclude that teacher’s role is essential for all of these
processes to take place, providing students with the opportunities to a metacognitive development and improve the learning process.

**Keywords**: competencies assessment, high education, blogs, feed-back, web 2.0., meta-cognition

**Ethnographic Sensibility: A Method for Studying Lurking as eLearning**

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**Abstract**: At present lurking is regarded as a notable eLearning strategy due to its frequency as a member strategy in online communities. Perspectives to lurking in eLearning vary in terms of activity, passivity, participation and contribution in relation to learning efficiency and outcomes. To enhance the notion of lurking as eLearning, a suitable research method is needed to provide conceptual means for shedding light to the specific discrete cultural nature of lurking and facilitate in bridging the relevant concepts and researchers’ experiences in a way that fulfills the demands of valid inquiry. Particular methodological focus is then on the subtleties of interplay between researcher and interacting subjects in eLearning settings. In this conceptual-theoretical paper we propose online ethnographic sensibility as a research method for detecting weak ties involved in lurking as an eLearning approach. We conclude by discussing how ethnographic sensibility can facilitate teachers in eLearning environments.

**Keywords**: ethnography, eLearning, lurking, social media, weak ties, qualitative research
Rethinking Creativity in Learning and Teaching With Technology in Romanian Higher Education

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Abstract: In recent years, the Web has made possible the access to educational resources on almost any topic, including resources provided by some of the top universities world-wide, for anyone, from almost anywhere in the world. In the context of the increased web-enabled access to information and the shift to knowledge society, the concept of creativity has gained new cultural, social, and economic importance. However, according to the European Commission, there is currently little evidence of innovative and creative uses of Information and Computer Technology (ICT) in teaching and learning (JRC/EC, 2009). Starting from these premises, this paper pursues four main goals: Examine the ways in which computer and media technologies have changed our notions of creativity; Explore ways in which computer and media technologies can be used to develop new practices of creativity in Higher Education institutions; Consider what changes in academic roles these new practices of creativity might entail; Contextualize the points above for the contemporary Romanian Higher Education. Most universities in Romania offer distance learning courses and part-time Higher Education programs, but the IT platform here is still rudimentary. Creative teaching and learning are not the main objectives of the existing distance-learning and full-time Higher Education programs. Universities in Romania are primarily furnishing an education based on passive provision, rather than active production, of knowledge. The persistence of such a model of education is caused by complex sociological and economic factors. This paper highlights some of these factors and proposes solutions that would enable educational actors and universities to develop innovative approaches with the aid of digital tools and media. We will draw upon existent literature across different disciplines (economics, sociology, etc.). We will also use the results of a questionnaire-based survey conducted among students and faculty from different Romanian universities.
**Keywords**: creativity, information and computer technology, learning, teaching, higher education

**Factors Influencing the use of Web 2.0 and Free Open Source Software to Optimize eLearning**

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**Abstract**: This paper discusses factors that influence the use of the Web 2.0 and Free Open Source Software (FOSS) to optimize eLearning. The study used the methodology of textual analysis to determine those factors that have been identified in related literature according to their frequency of appearance. A set of thirty six factors, wherein each of these factors has a frequency that is greater than a threshold of two was considered for further analysis. The analytic structural equation modelling method was applied to determine the importance of these factors in the optimization of eLearning using Web 2.0 and FOSS. Results indicated that technological factors when mediated by adoption are predominant for influencing the use of Web 2.0 and FOSS in the optimization of eLearning. This study serves as a cornerstone for those institutions that would like to leverage on Web 2.0 and FOSS for eLearning.

**Keywords**: Web 2.0/FOSS technologies, pedagogy 2.0, structural equation modeling, eLearning
Peer Review as an Activating Learning Method Within University Education

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Abstract: This paper reports about a study of a peer reviewing process in university education in the subject of e-business. Peer review is a current method to control the quality of scientific publications. It is the core element of self-monitoring in scientific communities. Research methods are part of higher education, so it is reasonable to teach the students how to survey and review the works of their colleagues. This study is based on a survey of different groups of students of two universities, who reviewed papers in the subject e-business. The method of peer-review is a form of reflective learning based on the theory of experiential learning (Kolb 1984). Based on the experience based learning model the different learning styles of the students were enquired and compared with their attitudes in different learning methods in general and the peer review in particular. The reviewing process requires that the reviewer deals carefully with the content of the reviewed paper. The students described how the reviewing process helped them to understand the learning subject. It also comes with the peer review to promote mutual support among students. The peer review as a learning method was used in three different course scenarios at two different locations in higher education; one scenario was realized in an Austrian university, two scenarios were located in a German university of applied sciences. The findings of the study show that peer review as a learning method needs clear instructions and guidelines for the learners. Clearly defined tasks and work instructions for each step is a prerequisite for the success of the peer review as a learning process. The feedback of the students about the peer review was very positive, for all students it was quite new, most of them never saw works of their colleagues. Moreover they liked the different learning methods.

Keywords: peer review, learning styles, experience based learning, LSI
eLearning and Freedom - Mainstreaming e-Diversity in Higher Education

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Abstract: Presently various different projects for improving study programs, staff facilities as well as teaching-techniques are running at our university, funded by the German government within a “Quality Initiative” (Qualitätspakt”) for five years. As one project component an eLearning center was established to implement the university’s eLearning-strategy. University management already devised and endorsed a strategy for eLearning with rough guidelines for implementing eLearning tools. Right now the eLearning center is set up with employees, rooms and equipment to provide different kinds of support. Reorganization of different ongoing and in particular new tools is already in progress. There are two main challenges: One part of the target group does not like eLearning, others use different e-tools which are highly disparate. On the other hand today students and lecturers bring along a wide range of different knowledge, different expectations, different experiences and different circumstances. There is lots of diversity in both: Lecturers AND students. Can you tackle these complex challenges as a newly founded eLearning-center through special strategies as named and explained below? What do these approaches imply and how do we try to handle the challenges we are facing by means of these strategies? Will we be successful and which specifications will have to be made on our way? In this article, we will first outline the educational situation at our University of Applied Sciences and emerging dilemmas. Based on this, we will explain how we try to deal with the resulting challenges applying specific strategies: As a first strategy, our approach of cooperative governance will be described and explained in context. Secondly, we also try to enforce a satellite-strategy in support and advice to face the scattered faculties. And thirdly the umbrella-strategy will be described trying to combine the wide range of eLearning tools and thus merge. A first approach in collecting relevant data is also added: Will a system of asking all involved stakeholders for their needs aimed at educational satisfaction be successful in showing resources and necessary developments of the system?

Keywords: mainstreaming, e-diversity, cooperative governance, umbrella-satellite-strategy, higher education

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A Web 3.0 Mashup to Promote the eLearning Platform “Unibook”

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Abstract: This paper presents a hybrid application (mashup) which has been developed to present and locate educational institutions that offer eLearning infrastructures. Although in the past a lot of attempts have been made to build similar applications, they had some drawbacks that made their use difficult and cumbersome; our proposed application overcomes these drawbacks by using modern technologies such as HTML5, CSS3, video streaming, social networks and Google maps. The mashup combines data from multiple sources in order to present educational institutions and help students and faculty to access online lectures and material, to build new academic co-operations and to share their research. Moreover, the developed mashup will be used to promote our eLearning platform named Unibook.

Keywords: mash-up, eLearning, Web 2.0, Web 3.0

The Three Worlds of Live, Virtual and Constructive Environments

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Abstract: Over the last two decades, information systems are perceived as a conduit for knowledge transfer. They are enabling people-to-people, people-to-computer and computer-to-computer interactions. This paper addresses the live, virtual and constructive (LVC) environments for simulations, education and performance support as three separate worlds that when combined could improve an individuals ability to gain insights, answer a question or perform a task in an informed manner. It concludes that if individuals understand which environment to interact with, they will have an advantage over others seeking knowledge.

Keywords: live, virtual and constructive, LVC, knowledge management, performance support, learning systems
New Module for Statistical Evaluation in LMS Moodle

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Abstract: In eLearning courses, there are various study materials as well as activities available for students. The systems usually use log files to archive data about the behaviour of particular students in the course, which sources and activities he/she worked with, in what time periods, where from, etc. Using various analytical methods, we are able to develop patterns of user’s behaviour in a particular course. However, to get an idea of real transition of the students throughout the eLearning course, we need to consider several other important factors, one of them being the usage of implemented multimedia elements (e.g. interactive animations). All available electronic systems are able to record the time at which the student opened the website where the animation is situated and when he/she moved to another website. None of them, though, was concerned with the activity of the student from the point of view of manipulation with interactive media elements. Thus, the systems only stated the time that the students spent at the website where the media element was placed but the question if the student really worked with the element still remained unanswered. Therefore, it is only adequate to ask how to verify the activity/non-activity not only based on the transition throughout the course (opening the lesson, filling-in the quiz), but also via the detection of mouse movement or stating the interactivity of the student with the study material. In the paper, we deal with the usage of new module Interactive Element Stat. The module has been being developed since 2010 and was designed and programmed at the Department of Informatics at the Faculty of Natural Sciences, Constantine the Philosopher University in Nitra as the supporting system for the area of the analysis of educational activities of the students in LMS Moodle. System Moodle version 2.2+ enables direct insertion of interactive animations or applets. On the other hand, it does not support the acquisition of relevant information about the activity of the student after their opening. The method which would allow stating whether the student really uses particular media element to develop his/her abilities and intellectual skills or the information are acquired only passively remained unresolved. The module we designed and created di-
rectly records various operations that have been realised with particular interactive element, writes the information down into the database and provides the tool for their text as well as graphics analysis. The recording of the operations is realised for each animation individually, even if there are more of them on one website. For each of them it is possible to export the number of accesses, time spent working with the animation and the number of direct accesses. Module Interactive Element Stat therefore broadens former statistical-analytical tool for assessment of the student’s activities in the eLearning course with new possibilities.

**Keywords:** eLearning, LMS Moodle, module, interactive element, interactivity, statistics

**Intro to Positive Psychology: Blending Interactive Behaviour in e-Lecture in a Private University**

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**Abstract:** Introduction to Positive Psychology was first offered as a course subject to the undergraduates in the department of psychology and counselling in October 2011 in a private university in Malaysia. Through an action research, the researcher investigated whether injecting interactive participation with e-lecture could be used to enhance students’ learning experience within the lecture theatre environment. The researcher has reflected that during the two-hour lecture hour, teaching and learning seemed to be the main one-way process which offers little opportunity for active participation from the students. Given the content-based of Positive Psychology, perhaps it would be interesting to encourage more active participation and sharing in this subject. Thus, the researcher has undertaken some strategies to use not only the usual power-point lectures but also to embrace students’ participation during lecture such as questions-and-answer tasks, little games, line-dancing, and personal video-sharing in order to inspire students’ engagement during lecture. Mixed-method design, that is both quantitative and qualitative methods, was employed in this action research. Out of 191 students, altogether 117 students (61.26%)
responded to the semester-end students’ evaluation. Results show overall rating of students as 4.49 (on a scale of 1-5), the rating of pedagogical and attitude perspectives as 88.86% and 89.57% respectively. Emerging themes such as “enthusiasm in class”, “interesting”, “meaningful sharing” and “positivity” are found in students’ qualitative responses. Feedback from students’ evaluation has helped in motivating the researcher as well as to further enhance the course’s quality and improve the satisfaction level of students in future delivery approach of the subject matter.

**Keywords**: positive psychology, action research, interactive behaviour, meaningful engagement, students’ assessment

**eLearning Modalities: A Framework for Selecting Audio**

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**Abstract**: A question eLearning developers face is what media design is best suited for teaching a subject. The design opportunities offered by multimedia are so vast as to often overwhelm. Literature provides some guidance. For example, Clark and Lyons’ (2004) taxonomy provides guidance about the communication functions of graphics for eLearning, concluding by advising which graphics are best for teaching particular content. However, direct resources to guide other modality types require more investigation. This current article investigates the audio modality for eLearning content. We propose that Clark and Lyons’ taxonomy provides a framework not just for the visual domain: that it can also be valuable for the audio domain. We develop and exemplify their visual taxonomy in the context of the audio domain. We adapted Clark and Lyons’ taxonomy to deconstruct the communication functions of audio for learning. The adapted taxonomy provides structure at multiple levels. It supports eLearning developers in pairing their educational content with appropriately matching sounds.

**Keywords**: eLearning, audio, sound, graphics, Clark, Lyons
Rights Management and Technological Protection Measures in Educational Field

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Abstract: Independently of the movements arguing in favor and against tight intellectual property (IP) protection the use of content in the educational field is still quite complex. The constant evolution of technology and the simplification uncertainty of Technical Protection Measures (TPM) make this a complex exercise. So, the right balance between fair use and content protection must be found.

In this paper the authors discuss the rights management status facing intellectual property challenges in the educational field, and also present a categorization of these TPM based on function and control grade versus the restriction they impose. Also, a pros and cons comparison of these measures is presented and a new architecture (Academic Rights Management System - ARMS) is defined applying a set of these measures according to the usual set of needs of the main players in the academic area. These protection measures discouraging and inhibiting the user to do infringements on basic rights causes some content usage inconveniences, but could enable a more flexible enforcement of rights that are previously defined by authors and expressed in a license.

Keywords: Rights management, intellectual property, fair use, technological content protection.

E-Enablement in Distance Education – Engineering Growth: A Case Study of IMT-CDL

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Abstract: In today’s environment, educated professionals are the need of the hour. Since it’s not practical for everyone to go through full-time man-
agement courses, distance education is a good option. But, bringing together educators and students from across the world, with all manners of learning, experience, requirements and skill set deficiencies isn’t easy. For this, e-enablement is being increasingly looked upon as a saviour. Use of e-resources allows institutions to touch base with an ever increasing number of students in an efficient and effective manner. E-resources like videoconferencing, interactive learning, social media tools and distributable notes are being adopted by distance and full-time campuses alike. This allows distance educators to be available more of the time and to more of the students. Factors like a steady increase in the adoption of the internet, portable computing, a deepening comfort level with technology and the entry of professional education firms in this domain are helping to cement e-resources as a viable teaching tool in the minds of the educators and students alike. However, simply having the infrastructure in place is not good enough if adoption and comfort levels are not up to the mark. Institute of Management Technology – Centre for Distance Learning (IMT-CDL) is a pioneer in the field of management education via distance learning. It has managed to steadily increase both the number of tools on offer and their respective utilization levels, thereby delivering a better learning experience. This study attempts to focus on the adoptability of e-enablement in distance education. For a practical perspective, we would be using our experience as coordinators for the online courses offered by IMT-CDL when examining the factors and their impact for the same. It will also be used for examining the past and for exploring avenues for the future of e-resources in distance education.

Keywords: eLearning, ICT, distance learning, IMT-CDL, social media

Hard-Skills on the Cloud – Certification Skills by Blended Learning

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Abstract: The purpose of this work is to introduce a certified education and training concept that makes use of a blended learning approach, while
taking into account economical, technical and pedagogical factors. The methodology has been developed for coordinate metrology, which plays an important role in innovation related to modern manufacturing and has a strong economical impact. The approach combines face-to-face training and practical workshops with the online learning of theory via the Internet. Using this concept, certified education and lifelong learning can be supported almost independent of the student’s geographical location and available infrastructure. This paper is structured according to the case study approach methodology and based on the eLearning tutorial model designed for the CMTrain (Coordinate Metrology Training) courses provided by the CMTrain association. This certified course has three hierarchical levels: (1) CMM-User; (coordinate Measuring Machine User) (2) CMM-Operator and (3) CMM-Expert, all focusing on practical engineering experience and promoting formal, yet flexible, self-learning. Each level is oriented to different personal profiles, such as employees from a manufacturing environment, research and development professionals as well as university students at different levels. This work promotes the use of a blended learning approach as it offers an important option for global education and training and sustainable economic and social development. Mixed strategies for learning, combining different approaches such as eLearning tutoring, allows for a targeted response to different learning styles while taking into consideration pressure due to result expectations and time limitations. All stakeholders, including individuals, companies, universities and countries, to name but a few, stand to gain from this approach.

**Keywords:** training hard skills; blended learning; eLearning; coordinate metrology

## The Role of the Online Learning Personal Tutor

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**Abstract:** This paper addresses the role of the Higher Education Personal Tutor working on online learning programmes. The following questions are addressed: How far should the role of the Personal Tutor stretch? With more learners opting for an online distance learning experience (rather than a face-to-face delivery), why has this change in delivery preference
led to such an increase of tasks that the Personal Tutor is expected to carry out? Students have different expectations when engaged in cyberspace activities and a Personal Tutor is asked to adopt the additional roles of counsellor from time to time. How do we ensure that boundaries are maintained and that hours for students to approach staff are respected? The paper looks at whether a university's regulations on these matters are upheld, especially when a tutor must deal with a very mixed group of students, from geographically different parts of the world who frequently enrol with serious personal issues, sometimes undeclared. Case examples of inappropriate demands on Personal Tutor time are presented, as well as examples of inappropriate behaviour that the Tutor is expected to reprimand. The paper presents good and bad practice with reference to Tutor involvement, as well as making suggestions for next steps with reference to tutor/student boundaries in cyberspace.

**Keywords:** personal tutor, online, role, boundaries, students, issues

**Improving Student Success Rates Through a Semi-Personalized Feedback System**

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**Abstract:** A preoccupation with many educational systems is predicting the important aspects of students’ future scholastic situations that will prevent their academic failure. Rapid developments of web-based educational technologies offer researchers appropriate opportunities to accomplish this by investigating influential factors of the learning process and student performance. This paper presents a semi-personalized feedback system based on data mining techniques to improve student success rates. The proposed system utilizes extracted knowledge obtained from the historical logs of former students and applies this knowledge to improve learning efficiency of new ones. Feedback systems enhance student motivation by informing them about their access pattern, learning path, current academic situation and probable total score. The test bed used in this paper includes all the system logs of student activities in an undergraduate software engineering course. The findings indicate a significant increase in stu-
dent scores, suggesting that the proposed feedback system has a great impact on their success rates.

**Keywords:** eLearning system, data mining, predicting student’ score, semi-personalized feedback, student’ success

**Education on Wheels – Mobile Dissemination of e-Services and Computer Based Learning in Rural Gujarat, India**

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**Abstract:** In Vision 2020 there is a belief that India will be the world’s leading country in less than a decade. When many countries in the developed world will have a high average age among its citizens in 2020, India is expected to have the youngest population in the world. If India will succeed in their strive for education for all this vision can come through, but if the strategies for mass education fails the vision will probably fail as well. In the five foundational pillars of the Vision 2020 education and Information and Communication Technology (ICT) are important factors. Out of the about one million public schools in India, less than 0.2% has access to internet or any implementation of computer based learning. In the age group of 6-14 years not more than 80 million children out of approximately 200 million go to school on a regularly basis. Gujarat is a state in western India well-known as the land of Mahatma Gandhi and a part of India with a fast economical growth in the 21th century. Gujarat is also known for a relatively good infrastructure management and educational reorganization. The aim of this paper is to describe some selected bus based initiatives for technology enhanced learning in Gujarat and discuss how they can contribute to the current education and future development in rural areas. This article is based on a combination of a literature study and digitally recorded semi-structured interviews conducted by the authors during a visit to Gujarat in 2011. We find that the bus based initiatives described in this article will improve the dissemination of e-learning in Gujarat but exactly to what extent is hard to say since they all are recently started projects. Old traditional transportation technology has been combined with ICT in a creative way that might contribute to bridge the educational gap
between urban and rural areas in the region. If India can get the bottom of the pyramid on board as well and provide quality education for rural regions, the country might reach some of the objectives described in the optimistic Vision 2020.

**Keywords:** technology enhanced learning, ICT4D, mobile learning, education for all, rural India

### Learning Analytics Artefacts in a Cloud-Based Environment: A Design Science Perspective

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**Abstract:** Learning analytics is the analysis of learning data for optimising learning and learning environments. A number of models or frameworks for learning analytics have been proposed, which focus on the process of analytics. Motivated by framework developments in other areas, such as systems development and IT management we propose to view learning analytics through the lens of design science. We identify a set of artefacts which extend the existing learning analytics framework along a second dimension. Incorporating a learning model based on interaction theory, the extended framework and artefacts are applied to a case study of business computing students studying customer relationship management in a cloud computing environment. The study shows the artefacts to be useful in extending the descriptive ability of the analytics framework. The significance of the work is that it provides a view of analytics through the lens of design science. In this way the extended framework provides a number of advantages for the application of learning analytics. The framework also contributes to learning analytics research by expanding the analytics vocabulary and providing tools for further research.

**Keywords:** learning analytics, business intelligence, cloud computing, design science
Note-Taking Skills and Student's Characteristics in Online Courses

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Abstract: To improve student’s study habits in online courses, note-taking activities were observed in order to track participants' study processes. This paper examines the relationship between note-taking activity, student's characteristics and learning performance in Blended learning and Fully online environments, both of which were formal courses at a Japanese university. First, three factors of note-taking skills, which are common aspects of note-taking activity, were extracted. The relationships between Blended learning and Fully online courses were compared statistically. Second, the relationships between student's characteristics, note-taking activity and learning performance in both courses were analysed. Third, causal analysis was applied to the relationships, and significant causal paths across metrics were extracted to create instructional procedures to be used by students.

Keywords: note taking, online course, learning assessment, learning skills, correlation analysis, causal analysis

Assess the Assessment: An Automated Analysis of Multiple Choice Exams and Test Items

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Abstract: Multiple choice exams are widely used in educational institutions, and normally strongly linked with an e-learning preparation phase and sometimes more recently embedded into an e-assessment environment. Besides many advantages (and some disadvantages), MC exams offer the possibility to be easily analyzed by various statistical methods. The
Item Response Theory provides several methods and models for this purpose. The most famous is the Rasch Model and its various extensions. Unfortunately, few lecturers (outside the field of mathematics, statistics or psychology) are familiar with these models and/or have the statistical knowledge to apply them. We developed a tool to automatically analyze multiple choice exams and their embedded items, using several statistical methods like the mentioned Rasch Model and its extensions for polytomous item response categories as well as more commonly known methods like hierarchical clustering, multidimensional scaling, factor analysis or analysis of variance. The automatically generated report lists the respective key figures of the various analyses, together with detailed explanations to help non-statisticians to easily interpret the results, thus enabling them to assess and improve the quality of their multiple choice exams and test items.

**Keywords:** multiple choice exams, item response theory, rasch model, automated analysis

“Why Bother?” Learner Perceptions of Digital Literacy Skills Development - Learning Design Implications

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**Abstract:** Digital literacy skills are essential for today’s citizens. These skills are expected for everyday personal use, learning and effective performance at work. The UK’s Quality Assurance Agency for Higher Education (HE) and employers therefore require graduates to be able to demonstrate these skills. However, the cost of UK university education is rising substantially and cash- and time-poor learners must decide what to prioritise. In this context they may favour subject-specific learning rather than skills development. How therefore can we engage learners in developing their digital literacy? The UK’s Open University is a distance learning institution. Its Faculty of Health & Social Care (FH&SC) has evolved different approaches for digital literacy skills development using technology-enhanced learning, based on skills resources that are either generic (usable by any FH&SC module) or are context-dependent and module-specific. Our Evaluating Approaches to Developing Digital Literacy Skills (EADDLS) project is
exploring learner experiences of digital literacy skills development to identify their needs and preferences, to inform how we can optimise learning designs to better engage and support learners. Furthermore, since skills activities are widely required across different programmes, there is keen interest in the pedagogical and resourcing implications of using generic activities, as opposed to module-specific activities that are more challenging to share and maintain. We therefore also explore the influence of design features such as generic or module-specific contexts. We gathered data from online questionnaires (n=298) and interviews (n=18) involving learners from three modules. Focusing on the qualitative interview data, we explore what learners value and why, including links between attitude, motivation, and preferred learning designs. We identify reasons for certain findings from our quantitative data, e.g. a preference for integrated, module-specific activities over separate, generic activities and suggest a framework for managing activity complexity based on familiarity with the skill and the context.

Keywords: digital literacy, skills development, ICT, learning design, motivation, contextualisation

Three by Three by Three: A Model for eLearning Evaluation

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Abstract: This paper describes the approach adopted to carry out an evaluation of the STEEL eLearning system, developed for an Italian online university. The aim of the evaluation study was to identify the strengths and weaknesses of the system in view of innovative potential and impact. The core of the adopted approach is based on an adaptation of the Technology Acceptance Model (TAM), originally proposed by Davis (1989) as a theory to model how users of a new technological system accept it and take it on, based on two main acceptance factors: perceived usefulness and perceived ease-of-use. Although the TAM was not developed specifically for educational contexts, several authors have subsequently proposed and demonstrated how adaptations of the TAM theory can be used to evaluate the
impact of technology even in these contexts. This paper is a step forward along this line of work to perform formative evaluation of eLearning systems. Though based on the TAM, our approach is also grounded on a couple of assumptions. The first is that data concerning actual use of the system and its effectiveness, in terms of concrete actions and achievements of its users, should also be considered, at least to complement and verify the data concerning users’ perceptions. A second assumption is that the evaluation should consider all the phases of use of the system (course design, running and evaluation), all the users of the system (students, teachers, and eLearning management), and all the components of the system (the eLearning platform, the learning resources and, last but not least, the pedagogical approach underlying the eLearning system). The resulting model is a three-dimensional one (phases of use, users and components), with three aspects to be considered on each axis. For each of the 27 combinations of these aspects, indicators of usefulness and ease-of-use have been identified, as well as, when available, data concerning actual use (derived from the tracking functions of the platform) and data regarding effectiveness (based on teachers’ adoption of new tools and students’ exam results). The paper describes the model and its indicators, discusses its pros and cons based on its field test. A summary of the results of the evaluation are presented along with considerations about future research in the field.

Keywords: eLearning evaluation, technology acceptance model (TAM), tracking, learning outcomes

Students Attitudes, Opinions and Perception of eLearning

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Abstract: This article deals with the impact of the ICT-supported instruction within the tertiary education. It introduces results of the comparative study running in 2009-11 at the Faculty of Informatics and Management, University of Hradec Královo. It focuses on students’ knowledge developed in the process of the traditional face-to-face versus ICT-supported instruction. The research was run in a technical subject - Database Systems. The
research focused on two key parts: (1) the comparison of outcomes in the process of education, (2) university students’ attitudes, opinions, perception and acceptance of modern educational methods and technologies, especially of e-learning. The project “Evaluation of the modern technologies contributing towards forming and development university students’ competences” was solved in last three years at the University of Hradec Kralove. The project verified the hypothesis whether the appropriate implementation of ICT within university education supports the process of forming new competences and leads to comparable students’ achievements in the cognitive process. The research subject was defined as the comparison of students’ performance in the experimental and control groups within the cognitive processes (committing to memory, understanding and application of gained knowledge). The experimental group includes data from ICT-supported instruction, while the control group contains data collected within the traditional face-to-face instruction. The main hypothesis was defined as follows: “The proposed ICT-supported concept of university instruction enables to reach students’ performance comparable to the traditional face-to-face instruction. Students accept eLearning form of education in a more positive way – in the area of attitudes, opinions and perception. The null hypothesis was accepted. The main objective is to analyze students’ acceptation of eLearning in the above mentioned fields. An active students’ approach to education ranks among primary principles of the successful process of education. This approach is considerably affected by perception and acceptance of educational methods. Due to this fact it is desirable to deal with students’attitudes and opinions on this issue.

**Keywords:** comparative study, eLearning, face-to-face, ICT, instruction, university education
Democratization of Knowledge and the Promise of Web 2.0: A Historical Perspective

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Abstract: The main thesis of this academic paper is that the so-called Web 2.0 is presenting connected world citizens with the prospect of entering and reshaping the zone of knowledge construction and breaking the gates traditionally erected by the knowledge masters and watchdogs. The questions addressed are: What does the history of knowledge tell us about the epistemology of knowledge construction? What gets published as knowledge and how? How has Web 2.0 refashioned and democratized knowledge? Following a brief theoretical background, this paper argues in Section Two, that the paradigm governing knowledge making until the positivist era consists of a top-down model, where truth is monopolized and knowledge imposed by powerful and closed elites on masses of mostly illiterate people. The gist of Section Three is that the advent of the positivist paradigm and the subsequent rise of the interpretive/critical paradigms have brought about a shift in and an expansion of the base of knowledge makers. Section Four considers how Web 2.0 has destabilized the knowledge construction process; the scene is now set for an unprecedented, massive, contribution to knowledge by ordinary citizens, who through the powerful tools of social media, are capable of validating popular versions of truth and implementing change on the ground.

Keywords: knowledge, theology, metaphysics, positivism, Web 2.0, democratization
eLearning Funding Programme: A Successful Measure for the Sustainable Modernisation of Daily University Teaching?

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Abstract: Since 2003 Freie Universität Berlin (Germany) has been supporting teaching staff in the realm of eLearning activities with a respective funding programme. By the end of 2011, 176 small and large scale projects were being funded with a total sum of 2.5 million Euros. In this 10th year of the eLearning funding programme it is time to take stock: Has the programme proven to be a successful measure for supporting a sustainable and innovative integration of eLearning into daily university teaching? Has it led to a modernisation of teaching by applying innovative didactical scenarios? In order to find answers to these questions an empirical study was conducted. The research design includes quantitative as well as qualitative methods of data collection and analysis. We conducted an online survey with all past and present project leaders in order to obtain a holistic picture of the project activities and results. In addition, we carried out semi-structured guided interviews with 10 people, which completed the picture by adding in-depth contextual information. As a key result we found that the vast majority of project leaders are satisfied with the results achieved within the scope of their respective projects. In addition, we extracted numerous supporting as well as repressing factors that have been categorised into a grid of 6 key success factors. These factors refer to the following issues: (1) Strategy; amongst other insights, we found that most projects succeeded in firmly incorporating their results into daily teaching routines. (2) Didactics; the results suggest, for instance, that the project activities led to the revision of didactical concepts of numerous courses. (3) Technology; amongst other things, we established that the centrally provided technical infrastructures were used extensively and that other standard and self-developed solutions also played a substantial role. In addition to the above, the article includes further results referring to the levels of (4) organisation & resources, (5) competence & support, and (6) acceptance & quality assurance. Furthermore, we discussed solid measures that aim at improving the funding for future periods.

Keywords: eLearning strategy, eLearning promotion, eLearning support, teaching innovation, eLearning success factors, eLearning evaluation
“What my Guidance Councillor Should Have Told me”: The Importance of Universal Access and Exposure to Executive-Level Advice

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Abstract: Often, knowledge and quality education is reserved for the elite, where there are systemic obstacles to gaining access to today’s leaders. Gender and racial inequities in executive-level positions across North America have been a long-standing debate amongst scholars and policy makers. Research has consistently documented that women are disproportionately represented in upper management and in positions of power and still continue to dominate traditionally “female” occupations, such as administrative support and service workers. Though gender inequalities are evidently present, there is also a clear under-representation of visible minorities holding executive-level positions as well. In order to reverse these trends, governments across North-America have enforced employment equity legislation and many organizations have voluntarily committed to similar initiatives. Perceived educational and career-related barriers to opportunity, choice, and information within these segregated groups are shaped early on. For this reason, many researchers champion early interventional programs in order to prevent such perceived barriers from developing. In this paper, there will be a thorough discussion on social networks and how certain groups are denied access to sources of social capital, thus hindering their ability to seek out prospective jobs or entering certain career streams. In this study, Women in the Lead, a database published in 2009, is a national directory of women whose professional expertise and experience recommend them as candidates for positions of senior level responsibility and as members on corporate boards. The Women in the Lead database was comprised entirely of professional women who had voluntarily subscribed as members. Of the 630 women asked to participate, 210 responded to the survey. The 210 women who responded were from 14 different industries in Canada and the US. The next generation was described as soon to be graduates of high school. A summary of this advice is reported in this paper, with the objective of providing guidance to the...
next generation looking to enter the workforce, regardless of their gender, location, and race.

**Keywords**: social capital, gender, visible minorities, leadership, career planning, management

**An Approach to Assessing Stress in eLearning Students**

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**Abstract**: On-line collaboration is becoming more and more common in education and with organisations. Many institutions encourage the use of eLearning platforms, as a complementary tool to support learning or, as in many cases, as the primary tool to do it (possibly the only one). It is believed that the sole use of such a platform can in itself be a cause of stress for students. Stress is a normal part of studying, but if not managed the proper way, stress can grow, become a problem and greatly influence learning success. This is particularly true when in an eLearning environment, where students typically may work alone, thus more susceptible to stress. Stress detection in an eLearning environment thus becomes a crucial factor to success, with eLearning students. Estimating, in a non-invasive way, the students’ levels of stress, and taking measures to deal with it, is then the goal of this paper. We do not consider the use of dedicated sensors (invasive) such as special gloves or wrist bracelets because we intend not to be dependent on specific hardware an also we believe that such specific hardware can induce for itself some level of stress. Our work focuses on the developing of a new module to incorporate in Moodle eLearning platform, to accommodate stress detection in eLearning students.

**Keywords**: stress, eLearning, model
Digital Natives ... are Changed: An Educational Scenario With LAMS Integration That Promotes Collaboration via Blended Learning in Secondary Education

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Abstract: The aim of the current paper is to present a didactic practice, the design and the implementation of a blended learning educational scenario with Learning Activity Management System (LAMS) integration, entitled “Digital Natives ...are changed” that aims to promote students’ collaboration and active participation via blended learning, in Secondary Education. The educational intervention was implemented via web, inside and outside the classroom, with students of the 3rd Grade of the 2nd Experimental Lyceum School of Thessaloniki, Greece in the context of the optional course “Multimedia-Networks”. For the implementation of the proposed educational intervention LAMS was used via the server of the Educational Content, Methodology and Technology Laboratory of the Hellenic Open University. LAMS is a “Learning Design” system which focuses on sequences of collaborative learning activities and participants (students and teachers) access an activity sequence with a different role (Learner and Author/Monitor). The suggested educational scenario focuses on educating students face-to-face (f2f) or from a distance, individually or in groups and collaboratively and with their own pace of study. The main aim of the activities sequence is to lead students to co-operate via LAMS and use Windows Movie Maker. Moreover, it aims to improve students’ creativity, reflective thinking, ability to compare their own experience with conclusions of a research work on digital natives’ changes and presentation skills. The implementation of the proposed blended learning intervention via LAMS showed that teachers and students are supported. Teachers can design their course and re-use their digital lessons/sequences; they can complement their teaching with web-based tools and support their students’ learning from distance. Also, they facilitate themselves with new tools for assessment and tracking students’ progress and they can prepare their lessons in a way that promotes interactivity, collaboration, group-working and self-controlled studying. Students collaborate in groups in the LAMS
environment and use the basic tools of Windows Movie Maker environment in order to synthesize their own movie. With that movie, they express the results of their reflective discussion about the changes of digital natives according to their experience and the conclusions of a published research paper. Moreover, students have the opportunity to familiarize themselves with LAMS, with distance and self-learning, with self-assessment and writing a text using language properly, with synchronous and asynchronous discussion, with uploading and submitting files to Web, taking into consideration their own safety. After the completion of the educational scenario the students are prepared to collaborate in future educational scenarios with more complicated Movie Maker application and generally with environments that use multimedia elements, like editing of video, combination of sounds, images and video. Also, they are introduced to critical discussion and they can express their conclusions after comparing their experiences with conclusions of a published research (written in different than their mother tongue). Additionally to all the above, the blended learning mode promote students to learn how they can learn, to organize their time according to their assessments and activities, to act collaboratively.

**Keywords:** blended collaborative learning, LAMS, movie maker, secondary education

**eLearning: Tool to Ensure Growth and Sustainability of SMEs**

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**Abstract:** This study makes a census of the written material on how eLearning can help businesses ensure their growth and their sustainability. A multiple case study shows that SMEs in Atlantic Canada find that benefits they get from eLearning, such as the reduction of the total training cost, and the possibility for the learner and for the business to choose the time and the location of the course, can help them ensure their growth and their sustainability. Some of the other factors they find that can help them ensure their growth and their sustainability include the possibility for the learner to only complete the part of the course that pertains to his needs...
rather than the entire course, the possibility for each learner to learn at his own pace and the possibility of evaluating the progress of the learners on a continuous basis. This study also proposes a plan to help the different actors of economic development introduce eLearning to SMEs.

**Keywords:** benefits of eLearning, eLearning, growth, SMEs, sustainability

### Self-Directedness and Critical Reading Skills in a Blended Learning Course: Analysis and Challenges

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**Abstract:** Blended learning is becoming a commonplace mode of instruction delivery in higher education courses. The purpose of this investigation is to determine whether the design of an online component of the blended learning course coupled with face-to-face instruction, had, in a local context, a positive influence on the students’ self-directed learning and consequently on their performance. The study included 105 first-year students of the Bachelor’s degree program who registered for the Introduction to Study Skills course, which, among others, was designed to develop the students’ critical reading skills in the English language. The notion of progression in building autonomy leading to a change in learner behaviour (Aoki 1999, Scharle & Szabó 2000, Benson 2001), underlined the whole design of the learning environment. The main focus of the research was on finding a possible interrelation between patterns in students’ online work and the quality of their learning. The research consisted of two consecutive stages of both quantitative and qualitative data collection. First of all, in order to characterize the individual learners’ online participation in on-line tasks as well as their course outcomes, descriptive statistics were used. The aim of this stage of the investigation was to ascertain whether there was a relation between the students’ frequency of access to materials, activities, and practice, and their end-of-course test results. Then, individual, semi-structured interviews with selected students who represented extreme cases, i.e. those whose results demonstrated either success or failure in understanding the subject matter, were administered. This made it possible to identify some key facets of the study behaviour of both ‘high-achievers’ and ‘low-achievers’, as well as to detect the students’ percep-
tions of their own engagement in self-directed learning. The results showed some substantial differences in the students’ readiness to employ self-directed learning, which was also reflected in the inconsistent qualities of their academic performance. Based on the data collected, suggestions for further steps in both subsequent stages of research in the field, and interventions that focus on potentially “low achievers” are presented.

**Keywords:** self-directed learning, autonomy, blended learning, motivation, academic performance

**Design and Redesign of Online Discussion: Comparison of Lessons Learned**

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**Abstract:** Online discussions can benefit learners, but instructors need to design them effectively. The literature provides many guidelines for best practices and instructional design elements that contribute to successful online discussion. On the pedagogical side, these include: using questions/assignments that encourage critical thinking, providing students with grading rubrics, keeping responses strategic, and aligning the online discussion with course objectives. On the management side, best practices include clear guidelines on netiquette, timelines, structure of the discussion, student roles (e.g., moderator) and technology requirements. In 2011, an online discussion assignment was designed for a graduate course, where each student critiqued the work of two peers and then discussed the critique received from peers about his/her own work. Then the instructor conducted a student survey to assess what worked or did not work. Survey results indicated that the online discussion had positive impact on students but there was still room for improvement. The purpose of this paper is two-fold: to present the process of redesign for online discussion by improving its weak design components as identified by the 2011 student survey; and, to present and compare the results of the 2012 survey from the redesigned online discussion with 2011 survey results. The redesigned online discussion is hypothesized to bring better results as meas-
ured by the same survey instrument used in the first design cycle, and that lessons learned in the redesign process can serve as a case study for teaching improvement and/or action research.

**Keywords:** action research, online teaching, online discussions, teaching improvement, critical thinking, assessment rubrics

**Challenges in Extending the Virtual Learning Environment Into Social Networks - Keeping Staff and Students Together**

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**Abstract:** In the last five years social networking has become an integral part of life in many countries around the world. As with any technology it is tempting to see these connected online spaces as a new solution to existing problems of student engagement with Higher Education. In this paper we look, albeit on a small scale, at the desire of students to allow educators into their online personal lives, the willingness of staff to embrace the challenge to existing methods, and our ability to integrate social networks with virtual learning environments without sacrificing the privacy of either party.

**Keywords:** social media, privacy, Facebook, Twitter

**The Efficacy of eLearning for Information-Retrieval Skills in Medical Education**

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**Abstract:** A randomised, blinded study addressed the extent to which the training method used to deliver information literacy skills instruction impacted on students' information-retrieval skills and other variables. First-year medical students at a major U.S. university (N = 128) were randomly
assigned to a control or intervention group for information-retrieval skills training on searching the MEDLINE database for the best evidence on common patient problems. The control group (n = 63) participated in traditional, instructor-led information and MEDLINE searching skills training, and the intervention group (n = 65) participated in the same instruction via a web-based tutorial. Data was gathered from multiple sources including a) pre- and post-training surveys, skills self-assessments, and written skills tests; b) the evaluation of students’ MEDLINE literature searches; and c) follow-up surveys administered at the end of the semester measuring students’ use of information resources for evidence-based practice. Students’ MEDLINE literature searches were evaluated by expert searchers, allowing for a comprehensive analysis of students’ literature searching skills for identifying the best evidence in the biomedical journals. Intervention group (e-learning) students earned slightly higher MEDLINE searching scores. Data analysis showed no statistically significant differences (P = 0.065) between the training groups, however, illustrating that e-learning methods and face-to-face training were equally effective. Study results provide a picture of students’ MEDLINE searching skills, information usage patterns and behaviours, and attitudes regarding library and information services and resources. Research findings are important for assessing the viability of self-paced, online tutorials for teaching and promoting effective information skills, particularly in evidence-based practice environments in which literature searching is routinely required.

**Keywords:** online learning, distance education, literature searching, bibliographic retrieval, information-retrieval skills, evidence-based practice

**Sharing and Shaping Effective Institutional Practice in TEL Through the 3E Framework**

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**Abstract:** This paper presents a case study covering the design, development, and implementation of an institutional benchmark for technology-enhanced learning which places an emphasis on the active use of technology to support key aspects of the learning, teaching and assessment experience. With a focus on issues including sharing good practice, collective
ownership of TEL strategy and implementation, and role modelling discipline-specific possibilities, this paper describes the 3E (Enhance-Extend-Empower) Framework, how it is being implemented at Edinburgh Napier University, and how it is being used across the wider sector. The paper concludes with a consideration of next steps including evaluating internal engagement with, and external adoption of, the 3E Framework.

Keywords: 3E Framework, benchmarking, cascading, staff development, institutional strategy

Designing and Developing Effective Peer Learning Assessment Services

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Abstract: The goal of assessments is to improve students learning, though the final output of the evaluation process is often a grade that "measure" students’ individual learning and performance, whereby assessment for learning today is not an effective training method. This article outlines on-going R&D activities in Europe for developing online Peer Learning Assessment Services (PeLe) for modern handheld devices like Smartphones, Tablets, and PC. The teacher is going to use PeLe as a tool for providing verification or elaborative feedback immediately after completion of assignments, tests and exams to single students or groups of students. Students will, when they still remember the questions in the test, learn why the correct answer is correct and why the other ones are incorrect.

Keywords: peer learning assessment services, smartphones, mobile learning, mobile technology, response technology
Applying the Prototyping Methodology to Develop a Student Centred, Integrated eLearning Resource

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Abstract: The prototyping model is one that is familiar from the software development world. In it a specification is considered to be evolutionary rather than fixed. From a simple initial specification, a system offering limited functionality is developed. This provides a subset of the anticipated full feature set. The prototype is then deployed and feedback from the users of the system informs and guides the development of the next iteration of the system. This mechanism contrasts with the top down, tutor centric approach taken in the development of many eLearning systems. This paper describes how the prototyping methodology was applied to inform the development of an integrated eLearning resource. This resource was initially developed to apply lecture capture technology to create a resource that allowed hearing impaired students to revisit and review captured lecture content through embedded subtitles. As the product evolved it became clear that traditional lecture capture resources available at the time did not fully meet the needs of the general student body. In particular the existing resources only addressed elements of the behaviourist and cognitivist learning theories but did not support constructivist or social constructivist learning theories. In addition they only supported certain of the learning styles identified in the literature. The authors set out to develop an eLearning system based on the initial work but within a flexible structure. This allowed enhancement and extension of the system as the feedback from its deployment was received. The paper discusses how feedback from both student and staff users was incorporated into the design process and how the development of the prototype was guided through these iterations to ensure that the application would map strongly against the core learning strategies identified in the literature. In particular it is shown how the online experiences of the students led to some of the limitations of traditional lecture capture as a tool for effective learning being overcome by the incorporation of web 2.0 related technologies into the product. This allowed the system to incorporate elements of user generated content, linkages and supporting materials to enhance the learning
resource, address different learning theories and increase student engagement. The feedback from the users in the classroom environment was a critical part of the development process and the paper presents the data gathered, discusses how it was analysed and incorporated in subsequent iterations and how the prototyping model for the development of eLearning resources could be deployed more widely.

**Keywords:** lecture capture, personalised learning, prototyping, student centred, Web 2.0

**Frame-Based Semantic Retrieval of Education Supportive Materials**

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**Abstract:** Retrieving resources in an appropriate manner is an important factor in increasing the performance of educational support systems. A variety of work has been done to organize materials for educational purposes using tagging techniques. Despite the effectiveness of these techniques within certain domains, organizing resources in a way that the related materials can be adequately reusable for support purposes is still to be achieved. In this paper a semantic approach is proposed to increase precision of retrieving educational materials. A frame-based representation has been applied to embed focal knowledge necessary for realizing the similarity/relevance between query and supportive materials. Owing to the complexity in semantic handling of the entire text, the suggested frame-based approach is applied only to the titles or sub-titles or in general the main headings in the material. To make these frames comprehensive, we have made use of two attributes called “Major Characteristics” and “Basic Constituents”, which are responsible respectively for “the goal behind a conceptual entity (Why/ for What a conceptual entity is being used)” and “the basic elements supporting a conceptual entity (How / in What way a conceptual entity is realized)”. Conceptual entities mentioned
here stand for the significant terms in the headings of a material. These attributes seem to have enough potential for representing the knowledge of titles and sub-titles, such that they reflect the content of the paragraphs in a reasonable way. To assess the capability of the proposed approach, selecting materials within the domain of Multi-Agent Systems (a subject of high concern in University of Tehran) was picked out as the benchmark problem. According to this benchmark, materials are selected based on the user’s desire. Taking this point into account, we made a dataset for the subject of Multi-Agent Systems, as an educational resource in academia, within which a number of users’ desires from different groups were considered as possible queries, and the corresponding materials were then selected using the proposed approach. Computer experiments show acceptable precision and recall rates for these queries, with a good balance between them which is represented as F-measure. This measure has been applied to evaluate the accuracy of our proposed approach considering both precision and recall and respectively direct to approve our approach's high potential capability. The findings lead us to believe the "Major Characteristics" and "Basic Constituents" may increase the status of re-usability for the stored contents. Moreover, the fact that materials can be reused efficiently, leads to the point that the materials represented in this way can be useful for educational support issues in the situations where user’s desire is complex enough that several materials ought to be merged together to yield the requested material.

**Keywords:** semantic retrieval, material selection/ reuse, educational materials, frame-based representation, frame attribute, major characteristics, basic constituents

**Multipurpose eLearning Course With Moodle Tools: First Steps in Design Research**

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**Abstract:** “Educational technology is an applied science in which the foremost goal is to improve educational practice” (Akker, 2006). Developments in school robotics in Estonia have created a comparatively complex prob-
lem - we need to create a multi-purpose eLearning course for many different target groups who are simultaneously using partially overlapping learning resources. Design research has been reported to be a promising methodology that is both systematic and flexible (Akker, 2006; Alimisis, 2009), assisting in the difficult task of creating a course and researching its suitability. A number of less-used tools in Moodle have proved helpful in addressing this challenge.

**Keywords:** multipurpose course, e-course, Moodle, design research

### Implementation of Netbooks in the Teaching of Mathematics in the Primary Schools

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**Abstract:** The article focuses on a one-to-one computing initiative in the Czech Republic in which netbooks were implemented in the teaching of mathematics in three primary schools. The teachers got didactic support from the publishing house which publishes e-textbooks but otherwise were expected to use their professional knowledge for the implementation of netbooks. The research questions were: How and for what purposes do mathematics teachers at the three schools use interactive whiteboards and netbooks? What didactic practices do they employ with these ICT tools? What are the pupils’ and teachers’ perceptions of netbooks? The methodology consists of video-recordings of lessons taught by the three teachers, of Diaries in which the teachers recorded the use of ICT in lessons, of semi-structured interviews with pupils and teachers and observations of lessons. The recordings of lessons were analysed qualitatively for the use of netbooks and an interactive whiteboard, mainly for the specific purposes and ways of implementation. The data from the Diaries were elaborated in a statistical way. The pupils’ and teachers’ interviews were scanned for repeating themes. The results consist of the description and comparison of the use of netbooks and an interactive whiteboard by three mathematics teachers in terms of time ranges, purposes and material used. The detailed analysis of episodes with these ICT tools identified in the lessons showed that the interactive potential of both tools was not fully used. The interac-
tive whiteboard was often used by the teachers only, and/or as a substitute for a usual whiteboard and netbooks were utilised for activities easily accomplished without them (such as reading a text). Mostly revision and practice tasks the same as in non-ICT teaching were used. On the other hand, several episodes which include interactive tasks and which enhance pupils’ understanding in mathematics were distinguished, which can be used in teacher training and show a way to improving the situation. Our study confirms the results of similar research in that a) pupils enjoy working with ICT tools and feel motivated for the subject, b) teachers perceive their teaching as more effective, c) the use of ICT does not necessarily change a teaching style, d) mostly individual work is encouraged as opposed to pair or group work, e) teachers need support. We conclude with stressing that it is necessary to triangulate results from several sources of data as each has its limitation.

**Keywords**: netbooks, interactive whiteboard, mathematics, didactic practices

### Employing the S-P Diagnostic Table for Online Qualitative Comments on Test Results

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**Abstract**: Research on computer-supported adaptive assessment of learning achievement has been done in various aspects. However, the major concerns of adaptive testing studies have concentrated on effectiveness and efficiency of the system built for the research experiments. It has been criticized that such general information has fallen short of providing qualitative descriptions regarding learning performance. Takahiro Sato of Japan proposed an analytical diagram called Student-Problem Chart (S-P Chart) in the 1970. The S-P Chart is able to establish a learning diagnostic table which comments student learning performance in a verbal (non-numerical) form. Complicated hand calculations have been replaced by computers and the execution of the tests has been moved onto the Internet. Such a
move makes the S-P analytical process more applicable for school teachers. This study presents answers to the qualitative questions of how online comments provided by the S-P diagnostic table could affect the students’ learning attitude. One hundred sixth grade students were selected to be the subjects of the study. The experimental process is as follows: after regular classroom instruction of selected learning units, an online embedded test was given to the subjects and an S-P diagnostic table was drawn by the computer to display instant comments on each student’s learning performance. A Questionnaire survey and in-depth interviews were performed to collect necessary information after the experimental testing process. A Questionnaire survey and in-depth interviews were performed to collect necessary information after the experimental testing process. Results indicated that students liked the online qualitative comments provided by the S-P diagnostic table more than the traditional numerical scoring. This is because students were able to understand why they performed well/poor in the test, which is much beyond the numerical scores can explain. The results also showed that the online S-P diagnostic table made students more circumspect on answering the test questions in order to reduce careless mistakes. Students would also be more likely to review what missed on the test. However, the results of this study cannot confirm that the online S-P diagnostic comments positively affect students long-term learning attitude. Prolonged investigation may be necessary to supplement the limitation of this study.

**Keywords:** adaptive test, the student-problem chart, learning attitude

**A Swarm-Based Approach to Adaptive Learning: Selection of a Dynamic Learning Scenario**

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**Abstract:** This paper presents an approach for selecting learning scenarios (LS). LS is referred here as a learning path consisting of a set of learning objects (LOs). Selection of LS is considered as recommendations of choosing and combining the set of LOs in accordance with learner’s preferences. This research issue is widely discussed in the eLearning context. When talking about adaptive learning, the selection of LOs is very important. LS can
be selected according to learner’s preferences by applying artificial intelligence techniques, e.g. a swarm intelligence model. Based on the overview of literature, we have noticed that so far the selection of LS was taken as a static object by using this technique, meanwhile in the real world LS is a dynamic object, and it can be modified during the learner learning process by inserting, deleting, and editing LOs. The paper deals with application of a modified and optimized algorithm as a dynamic optimization problem in the eLearning context. While learners act in the learning environment, they act according to their LSs. Information about learners’ behaviour can be gathered and kept in the so-called “pheromones”, which can be used later as recommendations to other learners. If we modify and/or change some LOs in LS, we should rearrange the alignment of new and old LOs and reallocate pheromones in order to achieve learner effective learning recommendations. In order to solve this problem, a new method, based on the ant colony optimization algorithm and adaptation of the solution to the changing optimum, is proposed. A simulation process with a dynamic change of LS, when new LOs are inserted, was chosen to verify the proposed method. The results reveal that the proposed method, based on a swarm intelligence approach, is suitable for selecting dynamic LS according to learners’ preferences. The developed learner model is based on their learning styles (LSt). The set of the analysed LSts is based on the Honey and Mumford typology. Several approaches can be used to identify a student’s LSt, including questionnaires and different soft computing techniques. This paper contributes with new developments: 1) an approach of dynamic LS selection, based on a swarm intelligence, and 2) a modified ant colony optimization algorithm for LS selection. The elaborated approach for LS selection can effectively assist in learners learning by helping them to reach most suitable LOs according to their LSts. Also, the approach is important for tutors by helping them to monitor, refine and improve eLearning modules and courses.

**Keywords:** learning scenario selection, adaptive learning, dynamic optimization problem, learning styles, eLearning
From Expert to Novice and back again? A practical and personal account of transferring a face-to-face taught Master’s course in leadership into a fully online asynchronous one for distance learners

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Abstract: It is an often unacknowledged fact that lecturers can feel they have moved from being consciously competent to consciously incompetent when forced to significantly alter both the delivery method and the course environment by virtue of having to change from teaching in one type of learning space (face-to-face) to another (distance) with little or no support.

What are the challenges facing the lecturer who has to redesign a successful face-to-face course? What support are they given to do this? What impact does this change have on them as professionals?

The lecturer has to deal with feelings that may include a lack of self-confidence and a sense of ‘deskilling’ in terms of both pedagogy and their technical abilities. They may feel that their competence has been challenged and have legitimate concerns that the course content is at risk of becoming of secondary importance to the chosen mode of delivery as they grapple with exploring and identifying appropriate technologies which are often new to them. Their technological sophistication will have a huge bearing on how readily they are prepared to interact and engage with new interactive learning environments and the support that they require to do so.

Are different skills required to teach online and if so, how does one acquire these?

This is an account of my ongoing journey as I seek to rethink and reframe my own teaching role in the face of demands to radically alter my approach to the teaching of a postgraduate leadership course in nursing. This new fully online course will run for the first time in 2012-13.

Keywords: face-to-face, online, skills, challenges
PHD Papers
Auto Grading and Providing Formative Feedback to Students on Documents Submitted Electronically

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Abstract: This paper presents a proposal to study the effectiveness of a new computer assisted assessment (CAA) system that uses the latent semantic analysis (LSA) approach to text mining to find the similarities between documents submitted by the students and the assessment requirements determined by the lecturers in a marking scheme. The focus is on documents that include different sections with headings. Visual information extraction techniques for text mining are used during the pre-processing stage, in order to construct an object tree for each submitted document. This technique takes into consideration the presence of different text features. Moreover, both the style and the contents of the documents are considered for assessment. The paper also describes in detail the prototyping of the different interfaces of the system, the progress and the results to date, which will be developed in further stages of the system's life cycle. The system detects plagiarized documents, checks the spelling and reports and corrects any grammatical mistakes. In addition, it provides preliminary grades for the submitted work, with intensive formative feedback. This feedback is then sent to both the students and the lecturers. The feedback to the lecturers includes a full summary and analysis of the students' work in order to capture the ability level of a class, to identify and assist any student with specific problems and to recognize any major shortcomings in the assessments as a whole. Moreover, it encourages students to produce work that is of a higher quality. Students also receive a full analysis of each individual part of their submitted document with detailed feedback on the level of work and how to improve it. The developed system is embedded into an eLearning portal, as this is the most effective and easiest way for students and lecturers to interact.

Keywords: computer assisted assessment, template, formative feedback, O-Tree, pre-processing, n-gram, latent semantic analysis
Work In Progress
Papers
Cooperation for Knowledge: An On-Line Framework to Promote Academic Skills in Economic History in Bolivia

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Abstract: This paper presents a project which aims to create an academic and research network in the field of economic history in Bolivia, as a way to promote the country’s economic development. The project has been developed by universities of three countries: Universitat de Barcelona (UB) from Spain, Universidad Mayor de San Andrés (UMSA) from Bolivia and Universidad de Valparaíso (UV) from Chile. The main objective consists in creating an academic framework to develop research and teaching skills in economic history in Bolivia through the cooperation of the three universities involved in the project. The methodology has been the design of a Web-Based Virtual Learning Environment (VLE) as a way to promote teaching cooperation among the three academic teams. The project has been supported by AECID - Spanish Foreign Affairs Agency for Cooperation and Development, and it has to be implemented in a period of two years. We present here the results regarding to the first year of the project. A second phase of the project has to be developed in 2013.

Keywords: knowledge network, virtual learning environment - VLE, economic history, research in developing countries

Using Technology to Enhance Formative Assessment

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Abstract: Incorporating formative assessment into classroom practice is a process which can provide advantages for academics and students alike. For the academic, formative assessment can give a real time snapshot of student understanding, if necessary allowing for timely adjustments to teaching strategies to be made (Garrison & Ehringhaus, 2007). For the student, formative assessment provides an insight into individual levels of
knowledge, allowing areas of weakness to be highlighted and thus further developed. Whilst the benefits of formative assessment are widely recognised, it could be argued that the way in which such assessment has been integrated into the curriculum has not changed to meet the needs of today’s technology driven students. As outlined by Beatty & Gerace (2009), “while the technology tools by themselves are not formative assessment, technology tools can be used to make it easier for both teachers and learners to engage in frequent formative assessment during actual learning.” To gain a deeper insight into the possible use of screencasting technology as a viable method of providing formative assessment, a project is currently being undertaken with a group of Architectural Technology students at the University of Ulster. Traditionally, formative assessment was provided to students via tutorial sessions, but feedback suggested that the majority of students did not favour this process. The aim is to develop a method of providing formative assessment in a way that appeals to students and in which they will more fully engage. A series of online quizzes with questions relating to key aspects of the curriculum are currently being developed which the students can access remotely, testing their level of knowledge and providing instant feedback on their level of understanding. The project hopes to gain an insight into the effectiveness of this formative assessment method, student uptake and overall impact on module performance.

**Keywords:** formative assessment, technology enhanced learning, eLearning

**Teaching and Learning Economy Through new Technologies: The EE-T Platform**

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**Abstract:** This paper presents a research project carried out by a consortium formed by 10 institutions from 8 European countries. The project is entitled: Economic e-Translation into e from European languages, and it is funded by the European Commission in the framework of Lifelong Learning Programme Erasmus-sub programme. The main aim of this project is to create a dynamic triangle of knowledge between research, postgraduate
education and innovation, by promoting the joint application of ICT tools and innovative strategies in several connected fields which could benefit from this interaction, such as: research on history of economic thought, study and teaching of economics, history of ideas, European studies and on the study of European specialized languages. In addition, through the EE-T Project the partnership will assess the impact of economic translation, thanks to an historical and linguistic analysis in order to fully understand the circulation of different approaches to the history of economic thought in Europe. The project is addressed to Researchers in History of the Economic Thought; researchers in Languages for Specific Purposes Specialized studies, Educators in HET, linguistics, Experts in Pedagogy, and Graduate Students. In this paper we will present the first results of the research activity consisting in the identification of economic text in the Romanian language and in the creation of the database. In this matter, we have identified a number of fifteen representative books on Economics that really made a statement in the economic field, in general. Students have shown a great interest in respect to the history of economics and to the key issues that have determined great economic thinkers to make several statements that, in the end, had a historical impact worldwide. We consider that the creation of an on-line platform, such as the one proposed in the EE-T Project, will bring our students and the overall academic community closer to the main issues related to past and present economic information, and will achieve a higher level of knowledge, with regard to the use of online learning instruments at the university level.

**Keywords**: educational resources, economy, eLearning

**Harnessing Open Source Technology to Address the Learning Needs of SMEs.**

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**Abstract**: Open source software (OSS) is gaining popularity in teaching and learning courses through the perceived benefits derived from its free availability, low-cost implementation, potential for independent or collaborative learning and enhanced student-teacher interactions. Moreover, its versatile and responsive nature coupled to the open access documentation
and online communities of practice offer an opportunity for teachers to participate in the development of courses and resources appropriate for the learners’ needs whilst improving their own technical skills. Most of the current literature on OSS used for teaching and learning has focused on the implementation of course management systems (CMSs). Currently, the most popular CMS is Moodle which is being increasingly adopted by further and higher education institutions in the UK. There are, however, few research papers studying the integration of open source technology and the harnessing of its potential to customise teaching and learning processes for specific educational needs. This paper reports on the development of blended eLearning courses for small and medium enterprises (SMEs) within the Hospitality and Leisure sectors. The courses are designed to address the shortage of language and cultural awareness skills and the SMEs’ specific training needs regarding the close targeting of the learning materials to their work practices, timely access to information and greater flexibility of delivery at a lower cost. The course design was informed by a needs analysis survey conducted in five of the countries participating in a European Union funded project, e-TALIA, www.e-talia.net, (Germany, Ireland, Poland, Spain and UK).

**Keywords:** open source software, blended eLearning, small and medium-sized enterprises, language and intercultural awareness, workplace learning

**Acceptance of Blog: Engagement of Students Towards Positive Learning in Higher Learning Institution**

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**Abstract:** Over the past few years, the rhetoric of implementing social media, especially web 2.0 technologies along learning management system (LMS) were assumed to diffuse pertinent knowledge among university students. The educators have attempted to follow what the latest study seems to suggest, but the question of their perception towards acceptance of social media support in learning and teaching system is still remain un-
resolved. Concurrently, the undergraduate students were struggling to par
down into something that sounds ‘interactive.’ Through adaption of Tech-
nology Acceptance Model (TAM), we aim to explore whether extension
contextual factors such as ease of use, interactivity and usefulness can en-
able our undergraduate students to be engaged in positive learning. As
matter of fact, thirty students from Mass Communication field were se-
lected for the pilot test where their coursework requires them to make use
of weblog- Edublogs support in complementary to their classroom learning
and teaching. Results shows consistent internal reliability for all the per-
ception of effectiveness factors where further extension research is signifi-
cantly supported.

**Keywords:** acceptance, engagement, ease of use, interactivity, usefulness,
weblog, positive learning

**Some Policy Implications of Bridging the Knowledge
gap in Clinical Transfusion Medicine Through
eLearning**

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**Abstract:** Technology has revolutionized the ability to facilitate profession-
al clinicians and nursing competence through the use of online education.
One particular area in which eLearning has been promoted is for blood
transfusion training with the ultimate goal of treating patients who are
deficient in one or more blood constituents. ELeaming packages are in-
creasingly being promoted as an effective way of delivering such training
within the National Health Services in Europe, especially the UK. However,
in the developing world this is still in its early infancy. Therefore, the present
study focused on critical examination of possible contributions of eLea-
ring in bridging the knowledge gap in clinical transfusion medicine with its
attendant policy implications. An extensive internet search was done for
eLeaming programmes focused exclusively on the clinical use of blood and
the in-hospital transfusion chain. Results showed that most eLeaming pro-
grames identified focused on the procurement part of the transfusion
chain with limited attention on the in-hospital bedside practice. Also, there
were no programmes detected that focused exclusively on the bedside practice to support prescribing clinicians and nursing staff. Some policy formulation that arise from the results include the development of competency assessment software for different skills; the introduction and accessibility of advanced technology and proper e-training of prescribing clinicians and Transfusion Safety Officers (TSOs) among others.

**Keywords**: blood transfusion, eLearning, prescribing clinicians, competency assessment, policy

### A Learner-Centred Induction to Moodle

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**Abstract**: Induction is central to helping students adjust to the culture and expectations of university. Effective induction can help to allay students’ anxieties about their chosen course and the demands of university study by offering opportunities for social, emotional and academic engagement with peers and with the institution (Christie et al. 2008; Packham et al. 2004). It can also serve as a ‘reality check’ for students with low expectations of the demands of higher education (Lowe & Cook 2003). However, induction can become overly programmatic and administrative, and can quickly cause information overload for new students adjusting to a new environment and new processes (Jones et al. 2009; Turner & Myer 2009). With increasingly diverse and varied intakes, university induction programmes must provide a social and attitudinal transition to university (Lavery 2009; Forrester et al. 2005) and help to build a sense of belonging and cohesion which is critical to student success (Thomas 2012). This project, a collaboration between the Department of Psychology and the Education Support Team in the School of Arts and Social Sciences at City University London, asks whether more active, learner-centred induction activities can increase student engagement during induction and help to foster a sense of community among the BSc Psychology cohort. This work-in-progress paper presents the project’s rationale, design and evaluation framework.

**Keywords**: learning design, induction, VLE, student support, psychology, engagement, community of inquiry
Contextualizing Distance Business and Management Education: A Case of the UK Open University and IIM LINK in Russia

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Abstract: Although a body of research on technology-enhanced learning continues to grow, studies that closely examine issues and approaches to cross-cultural contextualisation of distance programmes and courses are relatively scarce (Means, et al., 2009). Strategic partnership between the Open University Business School (OUBS) in the UK and the International Institute of Management (IIM) LINK in Russia, which marks a 20-year anniversary this year, presents a context where more analysis of successful practice in this area can be undertaken. OUBS is the largest business school in Europe in terms of student numbers and a considerable proportion of its students are studying through the network of regional centres in Russia and in other countries of the former Soviet Union (FSU) that is being coordinated by IIM LINK. This paper explores examples of contextualization at three levels: level of learning design and learning materials, level of teaching materials and practices and level of bespoke events for OUBS/ IIM LINK students and alumni. It also analyses approaches to embedding information and communication technologies (ICTs) into contextualization and their significance for enhancing distance teaching and learning practices in the age of global connectivity. The paper argues that the process of cross-cultural contextualization is far from being straightforward even when both institutions teach courses of virtually the same content and when their organizational structures are in many ways similar. It requires both profound understanding of educational systems and national and professional cultures of the countries involved in cross-border distance programme delivery and fostering of grass-roots initiatives and practices that allow for continuous improvement of distance teaching and learning practices. The paper calls for more collaborative approaches to distance and eLearning design that are sensitive to the needs of diverse student populations operating in cultural contexts other than those, where distance educational programmes were originally designed.

Keywords: eLearning, international distance learning, cross-cultural
Glogs as new Learning Products in our Universities

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Abstract: In this paper, we present the practice of continuous assessment developed at the University of Alcala de Henares (Spain). The main educational goal of this continuous assessment task (CAT) was that students were aware of different approaches related to the educational functions that should be included in the evaluation process. In its development we used Glogster (http://edu.glogster.com), a free online tool that is perfect for editing digital posters. Our general conclusion is not very positive. Students used Glogster to continue doing exactly the same things they usually do on a piece of paper, but this time they used a new tool that projected their results onto a digital screen. The development of the appropriate technical skills of tool 2.0 is not a problem when we applied web tools during the development of an educational activity. The element that really causes problems is the fact of thinking and creating an appropriate educational experience during the resolution of a learning problem. The change in mentality regarding the use and optimization of Web 2.0 tools in classrooms is the greatest handicap faced by both teachers and students.

Keywords: continuous assessment task (CAT), digital posters, glogster, university

How to Teach Science in 1 to1 Primary Schools: An Experimental Study About Learning Objects Efficacy in Critical Contexts

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Abstract: The One Laptop per Child (OLPC) project aims to distribute low cost laptop PCs (called “XO laptops”) in schools. The OLPC initiative has been implemented in many developing countries, but only Uruguay reached the “saturation” goal distributing more than 500.000 XO personal
computers, thus covering the entire primary school population (teachers included). This study is based on the idea that this One-to-One Computing model, joined to Digital Game-Based Learning, could represent a convenient, integrated solution for improving scientific literacy and students’ engagement in critical contexts. In 2010 we conducted a research about the use of infographics, animations and interactivity in Learning Object Design. This experiment involved N=226 early adolescent students from 12 classes of Montevideo. We presented the same content in 3 different ways, modifying the instructional format according to Mayer’s Multimedia Learning Principles and to the First Principles of Instruction by David Merrill. We compared the outcomes achieved by two experimental groups to the results of a control group that attended a frontal lesson led by a teacher. The first experimental group received a digital tutorial in a self-directed learning setting, while the kids of the second experimental group individually played an interactive “Learning Game”. Both of them were guided by a virtual tutor. In order to check the impact of the experimental conditions we identified 5 learning objectives using a content/performance matrix and administered four tests: Retention, Comprehension, Problem Solving Transfer Test, Delayed Problem Solving Transfer Test (after a week). We also used a qualitative tool, a self-administered questionnaire for the User Experience satisfaction.

Keywords: game based learning, one to one computing, instructional content design, user experience, multimedia learning

Perceptions of Staff and Students’ use of Digital Media

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Abstract: It is widely acknowledged that students are using different forms of digital media and cross-interacting these with a variety of social media/web 2.0 services in higher education. The modern learner routinely accesses such services, using a wide range of personal mobile devices including laptops, mobile phones, iPads and tablets to access resources in order to enhance their teaching and learning experience. Studies have further revealed that it is not uncommon for students to be interacting
with their peers through popular social media platforms such as Twitter, Facebook and Blogs. Wireless internet access is more widely available as is 3G mobile internet access. Further it has been widely predicted that internet-capable mobile devices will outnumber computers within the next year. Recent UK research from Joint Information System Committee (JISC, 2006) suggests that there is strong evidence that students utilise technology to suit their own needs and mix and match with the institution’s resources both formally and informally. However, this paper questions if higher education institutions adopt mobile learning as a major part of their pedagogical strategy; can they increase student satisfaction and retention, widen participation and reduce costs? We have a responsibility as academics to consider the following attributes and examine how they affect both students and staff. These issues include previous educational attainment, nationality, cultural as well as the on-going debate about digital native versus digital immigrant. For students, the level of entry, the mode of study, additional learning requirements and academic literacies are additionally important factors. Indeed, there is currently some discussion, whether this move to immersing teaching through digital media ignores the vast range of skills, knowledge, and experience by many segments of society. It also disenfranchises the needs and perspectives of those young people who are neither socially or financially privileged. Digital media may also be perceived as ignoring ethnicity, nationality, gender, and class biases of any sort and presumes a level playing field and equal access to time, knowledge, skills, and technologies. At the same time, students expect to access the internet 24/7--the internet (and students) never sleep! So for students, mobility and convenience is the key. Moreover, according to the mobile manufacturer Ericsson, 80% of the population will be accessing the internet using mobile devices by 2015. HE institutions, therefore, need to embrace and adopt mobile learning quickly if they are to keep abreast of students’ expectations. This demonstrates there is a dichotomy between students and staff usage; therefore, expectations of the pedagogical uses of digital media is a topic that requires exploration and further research.

Keywords: mobile learning, universities, student expectations
Technology Enhanced Learning at the University of Glamorgan With a Focus on Students’ Mobile Technologies

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Abstract: The speed of change and rapid development of technology is influencing the kind of learning and socializing with others that students undertake (Brown, 2000; Kolb, 1984; Grabinger and Dunlap, 2000; Oliver and Goerke, 2008). In this context, educationalists find it difficult to keep pace with new and emerging technologies that could be usefully deployed for teaching (Prensky, 2010; Czapracki and Burrows, 2011). The purpose of this paper is to offer an insight with respect to the mobile technologies students own and use whilst they study and live at the University of Glamorgan. The research will explore how the institutional technology enhanced learning (TEL) infrastructure can be used to meet learners’ needs.

Keywords: technology enhanced learning, mobile learning, mobile devices
Abstracts
Only
Making Changes to my job – What Difference can I Really Make?

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Abstract: There are many reasons for bringing about change: personal reasons; organisational policies; external factors we are faced with now: a difficult economic climate; changes in Governments and their input to educational policies. Occasionally, however, it is right to stop, reflect and evaluate on past experiences before continuing either along the same path, deviating slightly or in some cases in a totally new and different direction altogether. This paper is a work in progress, using the Bourner questions as “tools for reflective thinking” and the Bolman and Deal schema for reflection on why this change has come about, how I manage the change to my own practices as well as informing future evaluation of the impact of the change on the students, the Level 4 Undergraduates due to start the new academic year (2012). For the last 2 years, I have been actively engaged in action research looking at ways that I can change what I do in order to bring about an increased level of independence from my students. It came about because I felt that my lectures were too one-sided, it seemed as though I was doing all the work: the research; the preparation; the presenting and their part was to turn up and try to be interested! I was not happy with this so how could I expect them to be? Duch et al in 2006 advised us that it is the way that we teach and the levels of expectation that we set that contributes to the level of student motivation and intellectual maturity. Changing what I do could make the difference to the level of independence that I was looking for. But the students have to cooperate too. While it is all too easy to accuse them of not being interested and make assumptions as to why they are at University, many are telling us that they want to learn, expect to be challenged but need some guidance on what to do and a different way of doing things. They know they have to work independently but many do not understand what this means or how to start. I began with a review of one module – integrating technology trying to engage the students while disseminating all the required theory, encouraging them to research and demonstrating what I was doing as I prepared for each lecture. This included an evaluation of technology and research into blended and e-learning strategies and obtaining feedback
from students through observations, questionnaires and a small focus group. Working with a like-minded colleague, the development has progressed to a new BSc Honours programme, integrating technology with a fully student-centred pedagogy: problem-based learning. It is been commended as being highly innovative but some colleagues have expressed reservations of it being too student-centred. It is acknowledged that the challenge will be to change how I approach teaching while learning to let go and trust the students to do what is needed for maintaining the standards and expectations associated with a UK Undergraduate Honours Degree.

**Keywords:** student-centred pedagogy, action research, problem-based learning, change

**Neogeography in Action - Virtual Fieldwork in a Course on Economic Geography**

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**Abstract:** Learning to truly appreciate geography often starts with fieldwork. Going out into the field, starting from observation: Firms’ clustering, transportation modes, cities versus countryside. High student numbers however prevent taking groups of students out into the field. With mapping technologies (such as Google Maps) becoming more widely accessible we are hoping to bring this practical fieldwork back into an early stage of studies in the spatial sciences. Questions for this pilot whether it was possible to bring the practice of geography inside the lecture-room by using online questionnaires and user-uploaded photo’s. We expected motivation of learners to increase as a result of these more-practical tasks and active learning activities. These ideas were implemented in a pilot in the course Economic Geography 1. This course is an introductory course in the field, with about 220 students taking part. A team of two lecturers teach in this course, and were thus involved with this pilot. The main aim of the course is to connect main theories of economic geography with practical developments in the field. To connect theory with practice three exercises were part of the course. An example of one of these exercises is given in Figure 1. Students upload photos to a map, tag them as examples of theoretical
concepts in the course, and add a description of why they think it is a good example. In Figure 2 an example of a student photo and description is shown. Evaluations half-way and after the course show that students appreciated the exercises that were provided in the course, and were especially motivated by the exercises that provided a direct link from theory to practice. By adding engaging exercises in this course we have started to make a better connection between theory and practice. By using technology we have brought back the practical component in this introductory course, which was impossible due to the group size (220 students). In future implementations of this course we plan to make further use of technologies for learning, making it possible to learn in context by using the smartphones that more and more students are now bringing to the university. In this way we hope to find a model to enable virtual fieldwork that is efficient to carry out for larger group sizes.

**Keywords:** mobile learning, Google maps, geography, learning in context

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**Project Oriented Approach in the Professional Development Program for University Lecturers**

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**Abstract:** University lecturers are expected to be excellent researchers and at the same time deliver high-quality teaching. In the Netherlands all university lecturers nowadays need to get a University teaching qualification (UTQ) and universities organize professional development programs. The university lecturers need to reach world top quality and recognition in order to get enough research funding. This produces very high pressure on their time schedules. Although university lecturers in principle like to teach very much their intrinsic motivation to attend a professional development program is often very limited. This is also because the professional development programs focus mostly on the training in pedagogical knowledge and teaching skills and pay very little attention on the specific aspects of a discipline of the lecturer and don’t take into account their huge expertise in content knowledge. The increased learning possibilities brought by ICT are rapidly changing higher education. However, many teachers still seem reluctant to embrace technology in the classroom. They are advised to
attend trainings about the use of ICT in teaching. Unfortunately the traditional UTQ training focuses on learning about the possibilities of ICT tools and on how to use them. This is not enough motivating for the busy lecturers. In the Dutch project MarchET (www.marchet.nl, 2009-2011) we have asked the lecturers who started the professional development module to first define what they would like to improve in their course and to define the problem. We supported them in the process of redesigning their own course and to introduce a proper ICT tool in a didactically relevant way. They evaluated the effect of their teaching renovation in practice. The MarchET professional development modules were based on the TPACK model by Mishra and Koehler (2006). This approach motivated lecturers not only to professionalize their teaching competences but also helped them to change to the innovative practitioners in the courses in which they teach. The results of the professional development in ICT obtained at the Faculty of Science at the University of Amsterdam will be presented. The project based professional development approach to develop ICT lecturer’s competences which was developed in the MarchET project was implemented in the University teaching qualification program (UTQ). To stimulate and support the participants in their course redesign the UTQ projects were coupled to the ICT education innovation projects or grassroots project funded by the university.

Keywords: teachers training, project based learning, TPACK model, course design

Creating an Authentic ePortfolio Task for Practical Sports Coaches

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Abstract: purposes

This study examines whether changes to the process (chunking and interspersed submission via time line) of completing an e-portfolio positively affect the learning experience of the students. The aim of this study is to examine whether these changes promote on-going engagement with the
task and the reflective cycle as well as whether these aid in the realisation of authenticity of task and its benefits

Methods

Participants were second year sport coaching students at a UK University. This study uses an Embedded design: Embedded quasi-experimental mixed methods model (Creswell and Plano-Clark, 2007). Questionnaires and interview data were collected. The lead method is predominately quantitative analysis which will be supported with qualitative inquiry.

Results

Statistical results indicated the students found the e-portfolio were pertinent, $C^2 = 9.80, p < .0001$ and that students found the structure of the portfolio helpful in progression of the assessment, $C^2 = 12.80, p < .0001$. Qualitative results indicated that the students: 1/ found e-portfolio tasks were relevant; 2/ found the instructions were clear; 3/ step by step approach helped completion. P3 “The reflective blogs allowed me to keep a log of all the things I have done and how I have developed.” P12, “It was clearly set out and each deadline was well spread out and structured well.”

Discussion

These results indicate that chunking kept students on task and generated better success rates. This is in line with McCune’s (2009) findings that authentic learning tasks can lead to better engagement and also supports Herrington’s (2006) design principles.

Conclusions & Relevance

This study has found that changes in the process of completing the e-portfolio resulted in a 12.8% increase in grades. Replication of the process will be applied to examine the effects of this process on future iterations.

Keywords: blended learning, ePortfolio, self-efficacy, authenticity
An App-Based Resource for Mobile Learning

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Abstract: Students lead mobile lives facilitated by everyday technologies which increasingly impact on the way they study. In turn, educators are now utilising those same technologies to meet student expectations of individualised and personalised learning involving flexible delivery over variable time patterns in ways that fit with their general lifestyles. Reporting the outcomes of a small, qualitative evaluative study, this paper discusses the development and piloting of an app-based teaching resource for use by second year Criminology undergraduate students on a module on community safety. The resource took the form of a digitised map of a fictitious neighbourhood which students could download to their mobile devices and access on the move at a time and place to suit them. The map simulated the kind of social and physical environment, together with a range of problems that are likely to be encountered in a typical dysfunctional neighbourhood, without the ethical and practical problems of introducing students to a real context in which to learn. Some authenticity was derived from the inclusion of characters introduced in podcasts embedded in the map, each giving real life accounts of living in or near a high crime setting that have been tailored to suit the fictional context. The aim was to enable students to understand how social diversity and conflict act as barriers to community safety initiatives and how to overcome them. Through problem-based scenarios embedded in the neighbourhood students engaged with their learning individually and in communication outside the boundaries, and beyond the temporal and spatial constraints, of traditional classroom based teaching. A principal aim was to achieve some sense of immersion in the desired context but in a format that is simple to use and economical to produce. These are features that are less apparent in some virtual platforms, which require steep introductory learning curves, specialist developmental skills and high maintenance costs.

Keywords: mobile learning; app-based teaching and learning; immersion; virtual contexts
eLearning in a Faculty of Medicine - how we use BlackBoard™ and Moodle™

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Abstract: We have BlackBoard, and Moodle but we don’t have enough eLearning. This was the perception of our undergraduate medical students at an end of year review. Was it true? What did they understand by eLearning? Was it the same as the understanding of staff? This is an ongoing project which will establish an informed way of identifying eLearning to compare with the current understanding of staff and students in one Faculty of Medicine. This will provide a starting point to compare the actual provision of eLearning against the expectations and presumptions of key users. With this information it will be possible to shape the future provision and development of eLearning in a more coherent and focused way.

Stage 1 of the project. The Faculty of Medicine, University of Otago, uses two learning management systems (LMS). Moodle for the first two years of the programme and Blackboard for the remaining three. A debate on the relative merits of the two systems has focused on the usability of them, rather than on the educational (eLearning) perspective. Comparisons between the two systems are well documented but we needed to establish how they were being used. LMS content was categorised by the material and applications in use.

Stage 2. Definitions of eLearning vary greatly and without a shared understanding it is difficult to know if eLearning provision is appropriate. Following a review of the literature a process for identifying what constitutes eLearning will be developed. This will be applied to the current LMS content, enabling its categorisation into eLearning or some other function.

Stage 3. establishing staff and student perspectives. A mixed approach consisting of:

- A survey of course convenors (staff responsible for the many modules which make up the MB ChB course).
- A survey of all year 2 to year 5 students on our four campuses
A series of student focus groups to ascertain what they understand by eLearning and their interaction (academic and social) with the technologies available. What do they use and in what context?

Staff and student perceptions of eLearning will be compared with the categorisation derived from the literature and will also be applied to the material and applications found on the LMS.

Initial findings from the LMS review suggest that irrespective of which system is chosen LMS are used primarily for storage of resources. ELearning, as measured against our early categorising of the content, appears to play a very minor role. How staff and students view eLearning will help determine our future provision of eLearning and staff/student support.

A future development may be to allow benchmarking of eLearning provision against other institutions.

Keywords: eLearning; definitions; learning management systems; Blackboard; Moodle

Higher Education Lecturers Combining Working and Learning - Electronic Teacher Qualification
University of Groningen

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Abstract: The quality of lecturers in higher education is decisive for the quality of higher education. Therefore, since 2008 all Dutch universities have started to ask their lecturers for teaching qualifications. Via a University Teaching Qualification programme (further called: UTQ) lecturers prove their teaching competencies: 1. to design and redesign teaching 2. to teach and supervise students 3. to develop tests and assessments 4. to evaluate teaching Newly appointed lecturers can join a programme of courses to prove they possess these competences. Experienced staff members can do a registration programme to gather evidence of their experience. Both groups provide a portfolio to qualify. The UTQ allows lecturers to rethink their educational practices, and choose areas to improve on. The programme as it is now allows for flexibility, but, with 80% of lec-
turers at the University of Groningen expected to be qualified by 2016 the demands are high. So, an electronic UTQ was started to provide more flexibility, efficiency, and to streamline the management process of gathering portfolio evidence. The didactic concept differs from the existing norms of teacher training at Dutch Universities. The concept is based on the idea of scaffolding: providing support at the right level, but fading this support so that people can self-reliantly perform a task. The focus point is the task to carry out. We assume that this group of experienced lecturers will only seek support if they need it to do a task. So, explanation of topics is not provided first hand but can be found based on the competences of the UTQ. Examples of topics are: How to formulate course objectives? How do I reduce Powerpoint overload? How can I activate learners? How does a test matrix work? A metaphor for this didactic concept is writing an academic paper. Lecturers are self-reliant in writing academic papers, and focus on the task at hand (i.e. publishing research results). Often they start with a rough draft, filling it out as the research progresses, and finding help of peers where needed. From the didactic concept a Blackboard learning environment was designed. On the entry page the task is clarified, and a format for the portfolio is given. This allows lecturers to start straight away. Help materials (pdf’s, videos, web links, self assessments) are ordered along the main competences of the UTQ. Phone numbers of teacher trainers are provided, and links to actual courses are given. From September 2012 pilots are carried out to test the electronic UTQ. Preliminary results will be presented at ECEL 2012. The electronic UTQ will help lecturers to qualify for their UTQ in a flexible way. Further, this concept of offering a way to combine working and learning can help to reach a new target group of lecturers: lecturers who are happy to learn in their own time and place, based on the direct demands of their activities. We hope and will find out if the electronic UTC caters for these needs.

Keywords: university teaching qualification programme, Blackboard