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Preface

These Proceedings represent the work of contributors to the 9th European Conference on e-Learning, ECEL 2010, hosted this year by the Instituto Superior de Engenharia do Porto in Portugal. The Conference Chair is Carlos Vaz de Carvalho and the Programme Chair is Paula Escudeiro, both from the Instituto Superior de Engenharia do Porto, Portugal.

The conference will be opened with a keynote address by Prof. Juan Carlos Burguillo from the University of Vigo in Spain on the topic of *Using Intelligent Technologies to Support e-Learning*.

As usual the papers range across a very wide spectrum of issues, all of which are pertinent to the successful use of e-Learning applications. 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 in this area.

The range of researchers from different institutions in different countries is impressive. It is clear from the research being done all over the world that the role which e-Learning plays today and may play in the future is truly global. The really important outcome of this global reach is that research and new ideas may easily be shared among both the academic community and those practitioners in other organisations who wish to be informed of the most recent thinking in the field.

With an initial submission of 220 abstracts, after the double blind, peer review process there are 97 papers published in these Conference Proceedings. These papers reflect the truly global nature of research in the area with contributions from Australia, Austria, Belgium, Canada, China, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Greece, Ireland, Italy, Japan, India, Malaysia, New Zealand, Nigeria, Norway, Portugal, Romania, Russia, Saudi Arabia, South Africa, Spain, Sweden, Turkey, United Kingdom, United Arab Emirates and the United States. A selection of the best papers – those agreed by a panel of reviewers and the editor will be published in a conference edition of the EJEL Electronic Journal of e-Learning [www.ejel.org](http://www.ejel.org).

I wish you a most interesting conference.

Paula Escudeiro  
Programme Chair  
November 2010
Biographies of Conference Chair, Programme Chair and Mini Track Chairs

Conference Chair

Carlos Vaz de Carvalho has a PhD in Information Systems and Technology. He is a Professor at the Engineering School of the Porto Polytechnic (ISEP) and the Director of the R&D group GILT (Graphics, Interaction and Learning Technologies). He was e-Learning Director (2001-2005) of ISEP and Director of the Distance Learning Unit of the Porto Polytechnic (1997-2000). He has published over 75 references on the subject including several books.

Programme Chair

Paula Escudeiro is a teacher at IPP-ISEP with vast experience in project supervision and evaluation, accumulated for the past 21 years. She has a PhD on Informatics/Information Systems on Education and prior experience on software industry related to the development of educational software. She is the director of the Multimedia Laboratory at ISEP and belongs to the Graphics, Interaction and Learning Technologies research center (GILT).

Mini Track Chairs

Dr Mark Brown is the Director of Distance Education at Massey University, New Zealand. He has an extensive background in the use of new educational technologies. In 2006, he was a recipient of a national award for sustained teaching excellence and was a member of the Steering Committee for the Mahara open source ePortfolio initiative funded by the New Zealand government. He has a particular interest in the application of ePortfolios in the area of teacher education. In addition, Dr Brown has a particular interest in educational policy and was involved in a major analysis of eLearning policy across seven regions of the world including Europe.
Jana Kapounova is an associate professor at the Department of Information and Communication Technology (ICT). She teaches subjects as Educational Technology, ICT in Education, eLearning. She guarantees studies of ICT in Education in bachelor, master and Ph.D. degrees at the University of Ostrava in the Czech Republic. Her research field is eLearning and evaluation of its quality and recently adaptive personalised learning.

Paul Peachey is currently a module leader and senior lecturer based at the University of Glamorgan, Wales. He has been significantly involved in the development and management of two large e-Learning projects in Wales and is actively assisting the pedagogical design, development and installation of VLEs in Welsh schools. Paul has experience as an e-moderating trainer and continues to research the pedagogical aspects of e-learning solutions. Paul also assists the Centre of Excellence in Learning and Teaching (CELT) at the University of Glamorgan in its quest to establish good practice in the field.

Neal Sumner is a Senior Lecturer in Learning Development at City University London. He has been closely involved in the institution-wide implementation of the WebCT VLE between 2003 and 2009, and is now leading on the pedagogical strand of the project to implement Moodle as a replacement VLE for the university, as part of a wider implementation of a strategic learning environment. He has additional interests in e-portfolios, online communities and the impact of ICT on Higher Education.
Biographies of contributing authors (in alphabetical order)

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Islam Elsayed Hussein Ali, assistant lecturer at Fayoum University, faculty of tourism and hotels, tourism studies department, Egypt and currently at TU Braunschweig, institute of Business and computer science, Germany. Now he is registered to PhD in E learning, supervision by Prof. Robra Bissantz, Prof. Mortada Doma and Prof. H. Loteif.

Mubarak Alkharang is a PHD student at Brunel University. He received his master from Portsmouth University in Internet System Development. He worked as IT manager in Kuwait Oil Company (KOC), and is a lecturer in Computer Science Department at the Public Authority of Applied Education and Training (PAAET).

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Margarida Amaral has a degree in Chemistry from University of Porto. She is a project coordinator in the Unit of New Technologies in Education at U.PORTO and engaged in several international and national projects on New Technologies in Education. Currently coordinating a team of academics, that works toward the implementation of CBA in campus.

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Hana Avni-shone teaches remedial intervention in reading and writing processes at the Hebrew University in Jerusalem and at the Kibbutzim College of education. Her Ph.D is on the subject of Meta-Pragmatic talk with and between children. Her field of research involves the Dynamics of peer interaction, e-learning, and synchronic one on one teaching.

Isabel Azevedo has been lecturing at the Informatics Department at ISEP – IPP since 1999. She has several publications related to research carried in e-learning field at GILT (Graphics, Interaction and Learning/Technologies) research unit. Other research interests include knowledge representation and interoperability of information systems. She was an elected member of the European Association for Education in Electrical and Information Engineering council in 2006–2008

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Vanco Cabukovski is Associate Professor of Software Engineering at Faculty of Science and Mathematics, Sts. Cyril and Methodius University in Skopje, Republic of Macedonia. Research interests are in intelligent systems, e-learning systems and information systems. Professor Cabukovski is author and co-author of 24 books and more than 50 papers. He is author of 28 software applications in various areas and has participated in 24 domestic and international projects. He is founder and consultant of few software companies.
Rosário Cação graduated in management and holds an MBA. For ten years, she taught management at the Portuguese Catholic University. She was CEO of two Internet-based companies and she has been awarded two national prizes for entrepreneurship. She is CEO, co-founder, and trainer of EVOLUI.COM. She authored four books on e-learning.

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Mihai Calciu is a former international business professional. He presented his doctoral thesis in 1986 and became Assistant Professor at the International Business Faculty in Bucharest. In France since 1990, he joined the Marketing Research Team (EREM) of the IAE de Lille Business School. He became associate professor in 1993 and obtained his habilitation to conduct doctoral theses in 2000. His main research fields are Marketing Modelling, E-Marketing and CRM.

Esther Care PhD is Associate Professor at the University of Melbourne, Australia. She researches and teaches in educational psychology and individual differences, and has a strong interest in the use of assessment to inform teaching. She is currently the International Research Coordinator for the Assessment and Teaching of 21st Century Skills (ATC21S) project.

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Ivana Čechová graduated from the Faculty of Arts at Masaryk University with specializations in pedagogy, English and Russian. She has worked as Head of Research of the Language Department. Currently she is working as a senior lecturer. For her research work, she focuses on the following areas: ICT in teaching languages, E-learning, Teaching methodology.

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Geraldine Jones is e-learning development officer for the Faculty of Humanities and Social Sciences (University of Bath). In 2005 she received the University of Bath Innovation in Learning and Teaching award for the pedagogic redesign of a fully online MSc in Sport and Exercise Medicine. Her special interest is in the social construction of e-learning environments.

Anthony Kandler is Web Services Manager at the University of Greenwich, managing the team responsible for the implementation, development and support of the University’s VLE (WebCT), E-portfolio (Pebblepad) and Portal along with Library system. Previously a Principal lecturer at Greenwich Business School he has long standing interest in the use of technology to enhance the student and staff experience.

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Jana Kapounova is an associate professor at the Department of ICT, University of Ostrava in the Czech Republic. She teaches subjects as Educational Technology, ICT in Education, eLearning. She guarantees studies of ICT in Education in bachelor, master and Ph.D. degrees. Her research field is eLearning and evaluation of its quality.

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Blair Kuntz has been the Near and Middle Eastern Studies librarian at the University of Toronto library since 2003. Before this, he studied Arabic for Foreigners at the Balamand University in Lebanon and Birzeit University in Ramallah, Palestine. He has also studied Farsi and Turkish at the School of Continuing Studies of the University of Toronto.

Eugenijus Kurilovas is Research Scientist in Vilnius University Institute of Mathematics and Informatics and Associate Professor in Vilnius Gediminas Technical University. He is a member of 12 scientific committees, published >40 scientific papers, and participated in >10 EU-funded projects. His papers for ECEL-2008 and ECEL-2009 were selected for publication in Electronic Journal of e-Learning.

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Measuring Staff Members Attitude Toward eLearning at Faculties of Tourism and Hotels in Egypt

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Abstract: ELeaning offers new opportunities for both educators and learners to enrich their teaching and learning experiences through online environment that support not just the delivery but also the exploration and application of information and the promotion of new knowledge. A successful and effectively eLearning requires readiness from teacher, student, and technology. Teacher e readiness can be measured through three dimensions, competences, experience and attitude. This research will concentrate on the attitude dimension for staff members at faculties of tourism and hotels in Egypt. This may help Tourism faculties to promote the use of IT in teaching and learning and also apply eLearning effectively in these faculties to make qualified students for market work. Data was collected through a questionnaire of 92 staff member (professor, assistant professor and lecturers) of tourism studies, hotel management and Tourism Guidance departments. The paper contains also typical eLearning quality framework, SPSS program version 16.0 was used to analyses the data and reach to the finding of this study as frequencies, standard deviation, means, t test per pair between the dimensions, also average mean to measure these dimension, also cronbach alpha was made to ensure the reliability, beside the validity was been achieved. The findings have been indicated that the most staff members at faculties of tourism and hotels have a positive attitude towards eLearning.

Keywords: eLearning, e readiness, IT, quality, measuring e readiness, higher education

Computer-Based Assessment: Sounds Easy, is it Really?

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Abstract: There is an ongoing project on the University of Porto (U.PORTO) that aims the association of two didactical tools of information and communication technologies: eLearning and computer-based assessment (CBA). Implementing CBA at an institutional level raises several issues. Supporting staff, if existing, have to address and solve some hard challenges: pedagogical training in new assessment methods, technical problems in the implementation process and organizational problems. These last are particularly complex in a university campus like U.PORTO: large and spread.
The e-Assessment topic is of general interest for those who work in eLearning, specially now in the era of Web 2.0, where many questions arise due to so many different approaches of methodology, strategies and evaluation. U.PORTO is no exception. The need of being more accurate in the assessment process when using the web, even if the teachers use a blended-learning approach, is real and work is being developed in order to try to respond to this need. Although the eLearning Unit (GATIUP) works towards different assessment methods, this particular paper focus on the implementation of online tests on campus using the University LMS – Moodle. We will explore the experience acquired in implementing large scale high stake examinations in different faculties: Pharmacy, Economics, Medicine, Dentistry, Humanities. On the school year of 2008/2009, 1548 students did their high stake exams online; in 2009/2010 only in the first semester 869 students were evaluated and graded on Moodle. Also, test analysis has been conducted with interesting information about the items and the quality of the overall exam. It will also be presented the strategies that U.PORTO is engaging to overcome some of the difficulties found in the implementation of such project.

**Keywords:** assessment, multiple-choice questions, classical test theory, moodle

**Students and Blogging: How to Map the Informal Learning Process?**

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**Abstract:** With the increasing focus on lifelong learning due to the fast changing labour market, informal learning is gaining growing attention. In the research about learning, the potential of Web 2.0 technologies, such as weblogs, wikis, or social networks, has been described extensively in recent years. Some of the strengths are seen as arising from their bottom-up development, having emerged in the living contexts of the internet users, and from their active nature, making the users active producers of content instead of just passive consumers. Many projects have adopted weblogs, wikis, or combinations of them, in formal learning contexts, and have drawn connections to learning theories, such as constructivist learning. However, few studies have investigated the learning processes triggered by the new applications, in particular when they are used outside of course settings, in informal learning contexts. The study presented in this paper aimed at
empirically investigating these learning processes, by researching the case of informal blogging by students. Semi-structured interviews were held with 6 students of the Vienna University of Technology as part of a larger empirical study investigating the participation, the motivations and the learning processes of blogging students. The interviews were analysed on the basis of the model of experiential learning developed by Lloyd Davies. Davies’ model describes learning as a multidimensional process which includes, among other parameters, expectations, emotions, previous experiences, reflections and insights. The results of the interview analysis show that all students went through learning cycles in the course of their blogging. The learning cycles were initiated for instance by social experiences, such as unexpected feedback of people on weblog entries, or absence of comments in the weblogs. The interview analysis indicates that the informal use of weblogs triggers various learning processes. It can be concluded that weblogs might serve as learning tools outside of institutional curricula, and that they support informal learning.

**Keywords:** Weblog, higher education, web 2.0 and learning, informal learning, learning process, learning assessment, multidimensional learning

**Simulation Course Redesign and Educational Software Selection**

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**Abstract:** At the Hellenic Air Force Academy a Simulation course is offered at the 2nd year of studies to the Telecommunications, Electronics and Computers Engineering Cadets. It is a background prerequisite for future specialisation courses. The ability to model systems in order to understand their behaviour under various conditions is mandatory for Engineers. Moreover, simulation is a very important learning process because it enables the learner to easily experiment with natural concepts, phenomena and systems. In this paper, after examining the course syllabus, mission and needs, we present our educational policy and trends; next, we present the criteria used for selecting the most appropriate software package; from our findings based on software comparison and alignment to our policy and needs, as well as, an educational research on student acceptance, we decided to migrate towards an open source alternative, namely Octave. We thus present a three-year migration plan from the existing software to the selected one; finally, we expose our future plans and conclude.
Keywords: course redesign paradigm, simulation course, educational software, usability criteria, educational policy, GUI

S.E.L.C - Sportive eLearning Centre: Synchronous Short- Term Tailored Teaching for Low-Performing Students
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Abstract: Seminar HaKibbutzim College – a teachers’ training college, conducted a yearlong short term intervention eLearning center for Low-Performing pupils, studying in community schools. The experimental project is part of a combined qualitative – descriptive research, categorized as field based theory; this project constitutes the development of prior projects. Special education students mentored Low-Performing pupils in basic skills such as Mathematics and language via synchronized e- lessons, in the e- learning center. The teaching process included short term intervention by synchronous one-on-one lessons for the pupils – up to four lessons per pupil. The study attempts to explore effective teaching methods using the e- structure. The lessons were recorded throughout the school year and this paper presents the first findings which represent an analysis of the students’ teaching strategies based on teaching, learning, technology and mediation models. (Feuerstein, et al, 2006 ; Goldman & Hasselbring, 1997 ; Shulman, 2005 ; Mishra & Koehler, 2006).

Keywords: special education, teacher education, low-performing, synchronous eLearning, tutoring in reading and mathematics

An Automated Individual Feedback and Marking System: An Empirical Study
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Abstract: The recent National Students Survey showed that feedback to students was an ongoing problem in Higher Education. This paper reports on the extension of our past research into the provision of automated feedback for objective testing. In the research presented here, the system has been further developed for marking practical and essay questions and providing automated feedback. Recent research at the University of Hertfordshire was able to show that learners and tutors accept and value our automated feedback approach based on objective tests and Computer Adaptive Testing. The research reported in this paper is an important extension to this work. The automated feedback system developed for objective testing has been
extended to include practical testing and essay type questions. The automated feedback system, which can be used within any subject area, is based on a simple marking scheme created by the subject tutor as a text file according to a simple template. Marks for each option and a set of feedback statements are held within a database on a computer. As marks are awarded for each question by the teacher an individual feedback file is created automatically for each learner. Teachers may also add and modify comments to each learner and save additional feedback to the database for later use. Each individual feedback file was emailed automatically to learners. The development of the system is explained in the paper and testing and evaluation with 350 first year (1 final practical test), 120 second year (1 written and 1 practical tests) and 100 final year (1 final practical test) undergraduate Computer Science students is reported. It was found that the time to mark practical and essay type tests was reduced by more than 30% in all cases compared to previous years. More importantly it was possible to provide good quality individual feedback to learners rapidly. Feedback was delivered to all within three weeks of the test submission date. In end of module tests it was very beneficial indeed as it had proven difficult to provide feedback in the past after modules had ended. Examples of the feedback provided are presented in the paper and the development of the system using a user-centred approach based on student and staff evaluation is explained. The comments of staff teaching on these modules and a sample of students who took part in this series of evaluations of the system are presented. The results of these evaluations were very positive and are reported in the paper, showing the changes that were made to the system at each iteration of the development cycle. The provision of fast effective feedback is vital and this system was found to be an important addition to the tools available.

**Keywords**: assessment, feedback, automated systems, development, evaluation

**Approaches to Student Modeling in the Context of eLearning 2.0**

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**Abstract**: This paper reports on the development of a student model suitable for use in a web based adaptive educational system. Previous research has related to the use of co-operative psychological models used in adaptive educational multimedia based on learning style, language and other psychological descriptors (Barker et al., 2002). More recently we have developed and tested adaptive student models that relate to the visual and
verbal skills of learners (Adisen and Barker, 2007). In this work, important verbal and visual factors were identified and tested using statistical methods. Factor analysis was used to produce a student model capable of implementation in adaptive web-based eLearning systems. In the research reported in this paper, the next stage of this research is presented. This work presented is based upon a summary of our previous findings and is taken in the context of recent developments in web 2.0 technology. It is hoped to relate our models to the use of student models in a variety of real world scenarios. A feature of psychological student models is the wide range of contexts in which they are used. For example such models may be used in relative isolation, one student with one computer. We have found this sort of modeling often to be problematic and to rely on many assumptions that the system developer and pedagogical designer must make. Our previous work has shown that co-operative student models rely on far fewer assumptions and enable rich and complex dialogue between learners, computers and teachers (Barker et al., 2002). With this in mind we have produced a series of scenarios related the functions and properties of such co-operative models within a variety of the various contexts, for example student working co-operatively with teachers, students working in groups with other learners and teachers working with groups of learners. The richness of the new eLearning 2.0 paradigm necessitates a deeper understanding of the ways in which learning takes place by means of computers. In these cases the simple student model must be extended, we argue, to take into consideration this richness and diversity. In this paper we present our ideas of how this might be achieved and suggest a new student modeling approach for use in these circumstances.

Keywords: co-operative student model; eLearning 2.0; scenarios

Towards Text Mining in Technology-Enhanced Learning
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Abstract: In technology-enhanced learning environment, text mining can be useful for clustering course information, classification of student comments, for theses classification and evaluation, among others. We describe a pre-processing step and a method of text classification. The best results have been obtained for classification of theses. We discuss results obtained for classification of these three kind of texts and explain what additional information need to be exploited for improving a classification accuracy.
ELearning Expectations and Experiences of Executive MBA Students

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Abstract: This paper reports the expectations and experiences of students based on an investigation into the teaching and learning approach adopted for a UK University’s Executive MBA programme. This MBA is delivered using a blended-learning approach, primarily online via the university’s eLearning and distance learning support system, but also with regular periods of face-to-face teaching. The programme has been delivered for over six years to work-based students both in the UK and at several overseas locations. The aim of this research is to examine the students’ experiences and evaluate the effectiveness of the course delivery system that has been in place, and to identify scope for further improvement. The primary research method was two sets of questionnaire surveys conducted over a two-year period among students taking the course at both the home and overseas sites. The first set of surveys showed a high level of student satisfaction with the programme as delivered, but also indicated areas that could see further improvement. The impacts of the subsequent changes in both the programme and the blended learning support system were further investigated in a second set of surveys. The findings from this research have helped improve the blended learning approach, and enhanced the quality of the programme. It is hoped, in addition, that these findings can provide guidelines for other universities that offer, or intend to offer, blended learning courses in a global context.

Keywords: eLearning, blended learning, perceptions

Supporting the Processes of Teaching and Learning: How Digital Learning Platforms Support Progressive Teaching

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Abstract: This paper presents a theoretical framework focusing on the processes of teaching. The framework can be used for analysis of teaching and learning practice, as well as analysis of the intended processes proposed and supported in teaching/learning materials; on the other hand, the framework can be used when planning teaching and designing learning materials, in casu digital learning platforms. Processes are examined at the micro-level, identified as interaction sequences, and at the meso-level as
workflows. The macro-level, the level of modules, is only addressed sporadically in this paper. A course consists of several modules integrating several workflows, each of which comprises several interaction sequences. Two common processes are identified. At the micro-level, the most common interaction sequence is (the teacher's) Initiation- (student's) Response- (teacher's) Feedback (IRF) while an equally widespread process at the meso-level is a workflow called Lecture-Recitation-Seatwork-Plenary session (abbreviated as LeReSeP). These two structures are discussed and analysed, and they are criticised on a theoretical basis for being too teacher-centred, and leaving insufficient room for developing more complex competences in students. A number of alternative interaction sequences and workflows are described and discussed. These alternatives all have their advantages, but they are evaluated as more complex, troublesome, and inconvenient to work with. Teaching and learning materials support interaction sequences and workflows in a variety of ways by helping the teacher and students carry out their respective tasks. With digital technologies, it is possible to develop far more sophisticated support for the processes of teaching and learning. In the last part of the paper, an innovative type of digital learning platform, called Practice Scaffolding Interactive Platforms or PracSIPs, is presented, followed by two examples of how such platforms can support, project-oriented workflows by structuring the students' work, organising their collaboration, managing their products, presenting relevant subject matter knowledge and methods when it is needed, etc.

**Keywords:** workflow, interaction sequence, practice scaffolding interactive platforms, process management, teaching, computer supported collaborative learning

**An Intelligent eLearning Environment as a Part of an Integrated University Information System**

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**Abstract:** Advanced networking services, such as Intranet/Internet services can provide a basis for integration of knowledge and information on university level and in the same time provide a basis for distance education and learning. Huge production of teaching material each year, administrative and teaching information and library's collections need to be integrated on university level in knowledge and information university system. The process of integration must be improved with introduction of eLearning concepts and
technologies, content unification, digital libraries standardization and information management integration in order to establish e-university (virtual university) environment and be closer to the knowledge society and globalization. At our university we have built an Integrated Intelligent (Agent-Based) University Information System - IABUIS consisting of the following four modules: Student Administration Management System (SAMS), Library Information System (LIS), Distance Learning System (DLS) and University Management Information System (UMIS). In this paper a model of a distance educational system with an embedded agent infrastructure and an agent based testing subsystem will be also presented. It is an agent based extension to the existing distance educational system for learning mathematics and informatics for pupils and students called MATHEIS (MATHematical Electronic Interactive System). This extension is an essential part of a Distance Learning System (DLS) and IABUIS. Recently, at the Faculty of Natural Sciences and Mathematics, this system has been successfully integrated into ORACLE iLearning management system. The new iLearning/MATHEIS is agent-based and supports easy XML based import/export between applications, as well as SCORM and AICC based one-click import/export of the course metadata and content files. Similar integrations of intelligence in ORACLE iLearning management systems were not detected in a literature. The paper covers new trends and technologies in development of intelligent learning systems and integrated intelligent university information systems.

**Keywords:** integrated univesity information system, eLearning, testing subsystem, intelligent agents, multi-agent infrastructure

**Models of Assessment in eLearning: A Mix-Method Approach to the Choices of the Trainers**

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**Abstract:** Following a mixed-method approach, we have inquired 98 experienced trainers of eLearning courses about the method or model they use to assess learning outcomes and the reasons why they choose one over another. We have identified three core components of assessment: online tests, assignments, and online collaboration suggested in the online forums. These components are combined in five assessment models. The reasons why the trainers favor this or that combination of components and assessment models are mainly dictated by their previous experience using that model as well as by pedagogical concerns. They also express a diversity of other factors, which include the ease of communication to the trainees, the
ease of use, and the trainee’s motivation. When requested to reflect about their favorite models and about a few practical case studies, almost half of the trainers changed their preferences. In 42 out of 195 courses, the minimum criteria for the trainee's approval have been reinforced. Of the five models of assessment, the trainers massively selected three. Although the establishment of a unique model of assessment for all the courses was not desired, the company offering the courses now has five standardized models of assessment from which trainers can choose. Our conclusions can help trainers and training companies rethink their assessment models and the methods and instruments they use to communicate them to the trainees, so as to increase the satisfaction of the trainees and their perception of the quality of the courses.

**Keywords**: assessment, education, eLearning, models of assessment

**Document Based Business Simulations on eLearning Platforms: A Development Framework and Some Usage Evidence From France and Romania**

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**Abstract**: We consider a business simulation as document based when all the data concerning the simulation are persistently stored into documents (files) and the data exchange between participants relies exclusively on documents. The paper introduces a development framework for document based business simulations. We argue that business simulations are fast track vehicles for acquiring knowledge and can be central to developing comprehensive teaching schemes. When document based they can be easily embedded in eLearning platforms and extended using the latter’s collaborative, group-ware facilities. Students’ learning effort can be thoroughly tracked and compared to performance achieved during the simulation. By carrying an experiment based upon a marketing simulation, we show that student performance is positively affected by the use of available information and decision support. Additional evidence is obtained by collecting student performance and usage information recorded on the eLearning platform from two similar European strategic marketing courses. Both courses are based upon the same business simulations and are given within master programs in French and Romanian Business Schools. Our framework transfers most of the business simulation implementation work to documents and most of the simulation's interaction logic to the eLearning platform. It replaces many computer programming tasks by human readable documents leading to
increased separation of concerns and acceleration of the business simulation's access to the market. A prototype strategic marketing simulation based upon a dual customer attraction/retention model has been implemented using this approach. It is used together with an older version of the now classical Markstrat simulation, which can also be considered as document based, although the documents it uses are binary files. Both simulations have been embedded with the Moodle eLearning platform.

**Keywords:** business simulation, eLearning platforms, document based programming, learner performance, learner behaviour tracking

**Collaborative Problem Solving: A 21st Century Skill**

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**Abstract:** In developed economies changing employment practices are beginning to demand changes in the way in which schools operate and how students are assessed and taught with a focus on 21st-century skills. It is clear from much of the literature on changing employment trends that employment opportunities which demand collaboration and interaction between people, as well as problem-solving skills are increasing in number. This has implications for teaching in schools. This paper presents a definition of collaborative problem including both cognitive and social perspectives to examine the process. It examines the circumstances under which collaborative problem solving might best take place, and outlines a structure through which the contributing processes can be monitored in an electronic environment. Examples of the definition of learning progressions in collaborative problem solving are presented and the utility of these definitions for both small-scale formative use in the classroom and large scale summative data analysis is examined. These steps form part of the Assessment and Teaching of 21st Century Skills (ATC21S) project initiated by Cisco, Intel and Microsoft. ATC21S is a partnership between industry, government and academia across six founder countries. The ATC21S project began with the definition of the concepts of 21st-century skills. These were considered, analysed and organised within a knowledge, skills, attitudes, values and ethics (KSAVE; Binkley et al. 2010) framework. This paper explores the next phase of the project with regards to a combination of two of the key skills – collaborative problem solving. It outlines the research and development program that is expected to yield innovative, technology-based, interactive, complex group and individual analyses of performance within a collaborative problem solving context. The project is still a work in progress and will continue through to the end of 2011. The current phase of the project
constitutes development of tasks that can be completed in classrooms. The
tasks can be used to explore the thought processes and strategies that
students use as an individual within a group to solve both well defined and
poorly defined problems. We illustrate ways in which tasks can lend
themselves to coding to yield information that is usable by teachers
formatively to improve student performance.

Keywords: 21st century skills, students, assessment, problem-solving

Digital Competences in Online Classes

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Abstract: The paper first proposes a panorama of the changes that IT/ICT
are producing in different educational contexts. Soon after it focuses on the
analysis of two experiences which will be held in two schools and will involve
teachers, students and their families. The discussion of the projects is
preceded from a short summary of the most important Italian national
proposals for teaching-learning innovation. Soon after the features of the
projects to be activated in school year 2010-2011 in the two schools are
presented (i.e., the instruments and strategies for teaching innovation, based
on the use of IWB, LOs and eLearning platform are discussed). The analysis
of the differences in the two projects is mostly concerned with school
organizational management and school-families communication so that the
main elements under discussion are: the instruments both hardware and
software, to be used in the two situations, the information flow and the
process management due to the information system adopted in the first case,
compared with the simple communication of final data in the second one, the
involvement of all stakeholders and the attention to the feedbacks coming
from them, with respect to the simple acquisition of information from the
families. A description of the more general problem of digital competence
assessment follows, and the results from former investigations are reported
so that a better comparison of the two issues can be made.

Keywords: digital competence, knowledge society, information
system, liquid learning place, teaching innovation
Life-Long Learning in the Life of a Military Professional
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Abstract: The authors of the article focus on the language education of future military professionals which is realized at the University of Defence and forms an integral part of accredited bachelor, follow-up master and doctoral degree study programmes. The paper also introduces specific features of the full-time and combined forms of study at the University of Defence and shows how e-learning is used extensively to increase the efficiency of the foreign language education process. Great attention is given to LMS BARBORKA which is designed to control the combined form of study. It seems to be a very appropriate tool which allows the students to access it at any time and place in accordance with the principles of ubiquitous learning. It offers comprehensive interactive study materials aimed at practising basic reading comprehension and writing skills with special regard to students’ specialization. The listening comprehension and speaking skills can be practised with the help of web-based technologies which comply with constructive education focused on co-operation and project solving and enable students to communicate synchronically. Nevertheless, the individual approach to students and their needs is not neglected. This way, the students acquire both the essential motivation and they reach better results at their language preparation. In the area of ICT implementation the authors underline the pedagogical conception of e-learning which has to prevail over the technological conception, and they stress that the human factor is irreplaceable in the education process.

Keywords: full-time study, combined-form study, ICT, LMS, videoconferencing

Utilization of web Portals and Their Services: A Case Study
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Abstract: The paper describes a study on utilization of web sources by students from selected European universities. It sounds rather like a cliché that browsing the Internet, searching for information, studying on the Internet, etc. is a common matter nowadays but this statement forms a background to the explored area. The Internet with its specific services represents up to now unlimited space but at the same time also enormous time burden on its users. The study in here described strives for looking into this time burden spent in
the portals and the width and frequency of utilised services. The paper follows the standard pattern: introduction into the theme, methodological frame, description of the survey, sample and variables, followed by the data analysis and explanation of gained findings and conclusion. The methodological frame provides readers with definitions and explanations of key expressions related to portal solutions; like portal, portal services, characteristics and views on portal categorization, including developed own categorization fitting the needs of the study, the other significant part of the methodological frame deals with techniques applied in this case study. The elaboration of the questionnaire and the course of interviews are described in detail. The core of the empirical study “Utilization of Web Portals and their Services” consists of two parts; the first one is focused on rate of portal visits including time spent in selected kinds of portals and in the other part the issue of portal applications utilized by respondents of the survey is explored. So the aim of the study is to find out what time burden utilization of web portals and their services currently represent; how much time people spend in selected portals aside from professional or non-professional reasons with special focus on gender differences. The international survey was firstly run two years ago on the domestic field with the accessible sample of both students and teachers from the Faculty of Informatics and Management, University of Hradec Králové, last year the survey was enriched by the data collected at The Technological Institute of Pireus and Riga International School of Economics and Business Administration. This year data from the Universidad Politécnica de Madrid and Technological Educational Institute of Larissa have been gathered and analysed, moreover an up-to-date survey with students at the home university was eventually made. Data were placed into the spreadsheet and processed in statistical programme NCSS 2000. Conclusion brings the outline of further utilization of gained findings within the research of current trends of the portal solution development including the hot issue of social nets, web user satisfaction and usability of websites.

Keywords: case-study, communication channel, internet, information, portal, portal services

Social Learning Technologies: Are They Created Equal?

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Abstract: The use of internet and web-based technologies in educational systems is having serious implications for learners and educators alike. In these learning-based systems, control over information and what, where, how and to whom it is disseminated, has been traditionally all that mattered. With
the advent of computer technologies, these traditional views of information and learning are being questioned, and in some instances so too is the need for the institutions themselves. While learning was once predicated on information-transfer activities such as lectures, demonstrations and modeling, it is increasingly being recognized from a social constructivist perspective as an inter-subjective activity. From this perspective, human interaction becomes the precursor of cognition, i.e. higher order thinking. Nobel prize winner, Carl Wieman’s decision to abandon his research in Physics to dedicate his efforts to promoting social constructivist approaches in higher education science classes, is an example of the momentum of this movement. Evidence of the adoption of social learning technologies in formal learning sites is another. Recent educational policies being put in place in several countries in the European Union, for example, reflect the significance of Information and Communication Technology (ICT) for the field of education (eEurope 2002, eEurope 2005). While the implementation of such policies and technologies and the pedagogical changes they represent are encouraging in and of themselves, the assessment of the technologies and their comparative value to learning in these sites has been less forthcoming. The questions we ask ourselves when reflecting on these policies in choosing various ICT’s for formal learning sites are: What are the implications of social learning technologies on learners’ identities in formal learning sites? How do social learning technologies influence learning? Seeking answers to such questions has preoccupied us for the last 10 years. These questions were the original impetus for a doctoral qualitative action research project (Charbonneau-Gowdy, 2009) that examined social interactive asynchronous technologies such as networked forums and chats in the context of language learning. Disappointing findings early in the study, using certain social interactive technologies, led to the establishment of the Partnerships for Learning Pilot Program (PLPP). The PPLP was conceived as an international project to connect teachers in Canada and learners in multiple sites within countries new to the EU for the purpose of learning English. The interactive discussion sessions were supported by video-based web conferencing technology. Ethnographic methods were employed to determine the influence of the technology- supported discussions on the participants' foreign language identities and their language-learning. In 2006 and 2007, in the context of a second doctoral study (Cechova, anticipated 2010) within the PLPP, the second author added her own findings to this ongoing research. These findings provide significant quantitative support to the claim that not all ICTs are equal when it comes to learning a language. Cechova’s study also applies Grounded Theory, a qualitative research method in which a complex system of procedures is used to create a derived theory about a particular phenomenon (Strauss, Corbinova, 1999). By doing so, she provides further evidence of a theoretical expression of the reality of the participants'
experiences. The paper describes our research using various computer technologies, the respective methodologies and findings as well as suggests implications of this research for a broad range of educational fields. We conclude that video-based web conferencing technology provides opportunities for learner agency, identity and knowledge construction in a way that few other technologies have shown. The research will be of interest to stakeholders in education and those who seek to be informed users and or promoters of computer technology for learning purposes.

Keywords: video-based web conferencing, social learning technologies, identity and knowledge construction

Turn it in or Turn it off: Confirming and Disconfirming Experience for Innovative Computer-Aided Assessment and Feedback

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Abstract: The paper discusses the key findings of an institutional research project for an innovative computer-aided assessment tool - Turnitin and GradeMark experiences, funded by nLearning Ltd. (TurnitinUK) and the University's Education Sandpit Fund. Taking a small group of lecturers and their students from different disciplines across four faculties (more usage of technology versus less usage of technology in learning and teaching), the aim of the research is to critically investigate and evaluate how effective is Turnitin and GradeMark in (1) enhancing their experience of coursework submission, assessment and feedback? (2) promoting academic integrity by preventing plagiarism? (3) reducing lecturer workloads without necessarily compromising the quality? Both confirming and disconfirming experiences from students and lecturers were captured by in-depth video interviews and an online questionnaire. The comparative findings of this research demonstrate evidence-based data across different disciplines, for example, the top positive experiences and the top disconfirming experiences categorised in both technological and pedagogical aspects, comparative views of lecturers and students, and the comparative experiences with the traditional assessment and feedback mechanism. One key result is that Turnitin and GradeMark did enhance the assessment and feedback experiences for students, especially international students. One main enhancement is to improve academic integrity and to provide richer and prompt feedback compared with paper-based feedback. Lecturers, regardless of their technological competence, experienced an innovative end-to-end online submission, plagiarism detection
and online assessment which eliminated the frustration of storing uncollected or unread assignment feedback, a speeding up of the assessment process and were provided with a flexible marking facility. On the other hand, a list of pedagogical debates, technical difficulties and learning curve are the main disconfirming experiences among lecturers and students. Recommendations on these continuous debates about student-centered and pedagogical practices are concluded in the paper.

**Keywords:** computer-aided assessment, innovative educational tools for e-learning, technology enhanced assessment and feedback, online assessment, plagiarism

**Building a Virtual Global Community of Learners in Radiation Medicine: The IAEA Model**

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**Abstract:** The International Atomic Energy Agency (IAEA), a United Nations (UN) organization comprised of 152 Member States, is an internationally recognised source of knowledge in the radiation medicine domain (nuclear medicine, diagnostic radiology, radiation oncology and medical radiation physics), that is disseminated through its Department of Nuclear Applications- Division of Human Health (NAHU). The purpose of this paper is to describe the vision and strategy embraced by NAHU to help building knowledge in radiation medicine for the IAEA’s member states. The priorities and responsibilities of the NAHU warrant a staff component representative of, “content experts” (Nuclear Medicine Physicians, Medical Physicists and Radiation Oncologists). However in order to meet the needs of the changing context, this division is actively transforming into a place for “reflective practice” with a focus on the educational process. This transformation is best managed through progressive shifts in awareness and planned capacity building through several workshops for staff development in the basic principles and practices of education from January to September 2009. The mission of NAHU has gradually shifted from that of a provider into that of a facilitator that empowers professional experts through an education process with a focus on independent thinking, problem solving, and quality care for all. At the Curriculum Integration Workshop in December 2009, a new vision was established, and NAHU was articulated as, “a learning organization that
positions the division and its stakeholders as participants in a collaborative learning environment.” A second workshop, in March 2010, built on and extended the vision of putting education at the centre of all NAHU’s activities, focussing on the role of eLearning in the division. It considered the development of reflective practice, critical thinking and knowledge building through the medium of the virtual learning environment. This workshop served as a stimulus for NAHU, as the division strives to continue producing high-quality, locally relevant yet cost effective resources in an expanding eLearning environment. Within the broader concept of a learning organization, this transformation strategy will prepare NAHU staff to embrace the eLearning affordances to build capacity in radiation medicine across the globe, with a focus on low and middle income countries. It is the goal that through building a community of learners who engage via social networks in a participatory learning process, the gap in radiation medicine between the developed and developing world will not grow wider. Within the broader concept of a learning organization, this transformation strategy will prepare NAHU staff to embrace the eLearning affordances to build capacity in radiation medicine across the globe, with a focus on low and middle income countries.

**Keywords:** learning organization, capacity building, paradigm shift, eLearning, global community of learners

**Using Ontology and Metadata to Integrate eLearning Resources and Administrative Information System of University**

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**Abstract:** Currently in Russia there are a lot of centralized and distributed educational information systems based on "closed" standards (for example, on a certain databases platform) that justify themselves only within one organization, an example of this is a Web-based Administrative Information System of Perm State University called ETIS. Implementation of ETIS solves the most complex tasks associated with the educational process. In particular ETIS allows: building a unified information environment within the educational process, standardization and regulation of internal processes, formalization and transparent management of the university organizational structure, automation of teaching and methodical management of universities, the organization of electronic workflow as well as many other tasks. This can include, for example, effective processing of multi-faceted scientific information of different types (publications, experimental data, reports,
organizations, conferences, etc.). We attempt to employ Semantic Web technologies to integrate the huge amount of eLearning resources and the growing information, coming from the Internet and various distributed and local sources, with the resources of ETIS in order to provide a unified semantic search of relevant information for single and group users (e.g. instructors, courseware authors and learners). Applying an ontological engineering method to the learning content and an education methodical complexes design will automate the instructor’s work. It will help to estimate the quality and to define the completeness of methodical complexes, to compare and to monitor their compliance with government education standards. The presented intelligent tools are still under development, but some improvements have already been achieved. Using metadata and an ontological approach to learning and methodical content development is shown to enable new opportunities in eLearning such as an automatic generation of group/individual educational trajectories and support of the "cognition through construction" method. Within context of this method a student does not simply use information resources and software, but also produces both of them during the learning process. We demonstrate an eLearning system based on application domain ontologies for artificial neural network (ANN) learning and teaching. This subject was chosen for demonstration, because students learn it through a lot of practical experiments and there is a need to develop special tools to support ANN self-learning. After the ANN ontology description demonstration, we present our implementation strategy that is based on the Topic Maps paradigm, an ISO standard. The proposed strategy contributes to quick subject understanding, simplifies the assessment process and makes the exchange of knowledge and experience easier.

**Keywords:** ontology, metadata, artificial neural networks, topic maps, ISO standard

**A Learning Environment for Robotic Production Line Simulation**

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**Abstract:** This paper presents a framework for a robotic production line simulation learning environment using Autonomous Ground Vehicles (AGV). An eLearning platform is used as interface with the simulator. The objective is to introduce students to the production robotics area using a familiar tool, an eLearning platform, and a framework that simulates a production line using
AGVs. This framework allows students to learn about robotics but also about several areas of industrial management engineering without requiring an extensive prior knowledge on the robotics area. The robotic production line simulation learning environment simulates a production environment using AGVs to transport materials to and from the production line. The simulator allows students to validate the AGV dynamics and provides information about the whole materials supplying system which includes: supply times, route optimization and inventory management. The students are required to address several topics such as: sensors, actuators, controllers and an high level management and optimization software. This simulator was developed with a known open source tool from robotics community: Player/Stage. This tool was extended with several *add-ons* so that students can be able to interact with a complex simulation environment. These *add-ons* include an abstraction communication layer that performs events provided by the database server which is programmed by the students. An eLearning platform is used as interface between the students and the simulator. The students can visualize the effects of their instructions/programming in the simulator that they can access via the eLearning platform. The proposed framework aims to allow students from different backgrounds to fully experience robotics in practice by suppressing the huge gap between theory and practice that exists in robotics. Using an eLearning platform eliminates installation problems that can occur from different computers software distribution and makes the simulator accessible by all students at school and at home.

**Keywords:** learning robotics, production line simulation, industrial simulation, autonomous ground vehicles

**Pedagogical and Innovative Practice: Using technologies to Support Assessment and Assessment Feedback in Real-Time**

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**Abstract:** The Pedagogical and Innovative Practice (PIP) project is funded by the Centre of Excellence in Learning and Teaching (CELT) at the University of Hertfordshire in the United Kingdom. The project was carried out across a community of practice at the School of Computer Science, with six members of academic staff teaching in teams on a variety of subjects such as data visualisation, and strategic information and planning management. The intention was to address assessment issues highlighted by students as captured on the National Student Survey in the UK; and related to students need for more informative and timely feedback on assessment. With this in mind, assessment practices comprised of learning design and activities
intended to support student learning within and beyond the classroom individually and by group learning. These practices were grounded in instructive and social constructivist theories in learning, teaching and assessment practice. Their design was intended to provide learners with timely feedback on their assessment. Initial lessons learnt as presented in this paper include: planning and preparation by tutors for technology use, different academic experiences, and conceptual perspectives, student and staff engagement, use of different types of assessment methods and practice, and the different types of feedback.

Keywords: assessment, feedback, collaborative learning, social constructivism, podcast, technology-enhanced learning

E-Learning: A Solution for Human Resources Development

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Abstract: Human resources development (HRD) is helping employees and organizations to develop their skills, knowledge, and abilities. The organizations are competing for their key resources, including knowledge, which are rare, valuable, imperfectly imitable and not sustituible, and make them strategic resources to obtain competitive advantage. Growing their skills and abilities is a life-long task. This article is about human resources development through different learning methods, especially through eLearning. E-Learning is a solution to employee training, development, performance improvement, and for education. The aim of the article is to describe HRD in order to obtain performance, and analyze eLearning (its benefits and its costs) in order to develop human capital and to obtain organizational efficiency. The globalization and the rapid changing work world make the organizations to invest more money in HRD than before. This learning method is presented in order to be understood as a process by which individuals continually develop their skills and knowledge, and organizations develop their competitiveness and innovations to obtain advantage.

Keywords: human resources development, eLearning, knowledge management, performance management, life-long learning
Weblog as a School Project Journal

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Abstract: The paper is an example of a good practice of the use of weblogs or blogs in an international school project. A Wordpress blog was used as a journal of an eight months-long project two elementary schools from Slovenia and Croatia conducted. Firstly, the article examines the potential of a blog as a project journal and discusses various Web 2.0 tools (video, audio and photo sharing, GEO tagging, social networking, etc.) which can be used for documenting and showing the project working progress, as well as making the journal more interesting to its readers. In the second part, the article analyses the use of the collaborative blog Dragonja: a River and a Valley that Unite (www.dragonja2009.wordpress.com), the role of the blog and other Web 2.0 tools in boosting children’s interest for the project, initialising international dialogue and cooperation among children, informing general public about the project, and, last but not least showing an inexpensive and easy way of documenting a project. In addition to this, during the course of the project blog also proved to be a tool that required minimum knowledge of information-communication technologies from the part of a teacher.

Keywords: Wordpress blog, Web 2.0, project journal, case study, school

Creating Effective Multimedia Learning Materials for the Mobile Platform: Ensuring Current Guidelines fit new Platforms

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Abstract: Blended and online learning are both now commonplace throughout education, from school level to University, and much research has been carried out on best practise methods for producing this material. Not least of these are the Cognitive Principles of Multimedia developed by Richard Mayer and his colleagues over the past two decades. With the proliferation of mobile devices the area of mobile-learning is now also beginning to be explored. At the moment, however, little research has been done on whether existing e-learning guidelines, such as Mayer's, still apply when material is converted to mobile-learning. There is a danger that existing guidelines are blindly applied to this new platform with no thought for how the usability, accessibility and context of this platform might affect them. This paper outlines Mayer's elearning guidelines and details an experiment in which these principles were tested on a mobile device to determine whether they still apply. Three learning presentations were developed in Macromedia Flash, each in two variations, in an attempt to test the Multimedia Principle
and the Contiguity Principle. The presentations were converted to 3GP video format and displayed on Sony Ericsson S700i mobile phones. The learning evaluation was carried out on 31 students of Jewel and Esk Valley College. This involved splitting the students into two groups and showing them one of each of the presentations; one group receiving presentations applying the relevant multimedia principle, and the other receiving presentations that directly contradicted the principle. The students then answered problem solving questions on the presentation subject in order to assess their level of learning. The Multimedia Principle was shown to remain valid on the mobile platform, animation and narration producing 140% more correct solutions than narration alone. The results for the Contiguity Principle were less conclusive; the contiguous media did indeed produce more correct answers by a factor of 1.26, but the t-test showed that this difference could possibly be accounted for by errors alone. It was concluded that the mobile phone context may counteract the normal contiguous media effect, but it is suggested that more work needs to be done on this area to produce conclusive results.

**Keywords**: mobile learning, multimedia learning, mobile video, multimedia guidelines

**Livechat: Issues of Control**

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**Abstract**: As online learning becomes more widespread in Higher Education (HE), so issues of control become more salient to discussions of learning and teaching. There is widespread recognition that the university teacher’s role is increasingly that of facilitator and guide rather than director and total expert (Greener, 2008c, Mentis, 2008), but this raises problems for some teachers as it challenges their pedagogic beliefs, and in turn, can cause them to shy away from interaction in online learning. For these teachers, Virtual Learning Environments can be frightening places in which their expertise is exposed to challenge and students can assume greater power (Greener, 2008a, Greener, 2008b). Even more frightening then, can be the experience of facilitating livechat. Livechat is a synchronous form of Computer Mediated Communication (CMC) which requires all participants to be present online at the same time. In a campus-based course, such communication is likely to serve the purpose of task based groups, or part-time students who have little time for group work or further interaction with their cohort on campus due to the demands of work and family. In a distance education course, livechat can offer perhaps the only directly personal link with remote learners and tutors who may never meet (Greener et al., 2008), unless video conferencing or instant messaging is also enabled. The current emphasis on asynchronous
CMC in much online learning may cause problems; according to Haefner (2000), asynchronous communication alone can be “convenient, flexible, inexpensive, less resource-hungry, and, well, lonely?”. Livechat has a major advantage for the research practitioner – there is an automatic transcript of the conversation between learners and tutor. These transcripts are immediately valuable in helping all parties recall detail from what can be a turbulent, fast-moving exchange, in order both to reflect and to take action on promises made or problems raised. But for the research practitioner there is an opportunity here, provided ethical guidelines are followed, to explore in detail the process of livechat and dimensions such as turn-taking, social and teacher presence, negotiation of group knowledge, differences of focus and interaction in comparison with face-to-face interaction or asynchronous interaction, as well as the development of critical discourse. According to Park and Bonk (2007), there is still sparse literature on this form of CMC and this may be because it is a daunting experience for many teachers and has thus been taken up far less than its asynchronous cousin. Since it seems likely that the behaviour of the teacher in livechat may have a major effect on any potential learning in this forum (Duemer et al., 2002, Garrison et al., 2003), and that the outcome of critical discourse as well as socialisation is possible and desirable, though not easy (Burnett, 2003, Garrison and Cleveland-Innes, 2005), this study aims to analyse livechat transcripts from an undergraduate course to explore just how control is operated and the impact of control on learning outcomes. WHY OF INTEREST to conference Research practitioners engaged in Higher Education regularly use asynchronous communication tools but not so frequently experiment with synchronous communication (livechat). This study is of direct relevance to those who wish to do so, seeking to understand how teachers and learners relate to issues of control in livechat.

**Keywords**: chat, synchronous communication, control, pedagogy, eLearning

### Enhanced Approach of Automatic Creation of Test Items to Foster Modern Learning Setting

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**Abstract**: Assessment has to be seen as an integrated and important activity in the learning process. In particular modern educational approaches - such as self-directed or exemplary learning - and personalized learning activities cause a tremendous effort or make it even impossible to prepare appropriate and individualized test items, assess them and provide feedback. This
situation has motivated the Advanced Educational Media Technologies (AEMT) Group at Graz University of Technology to initiate a research program on e-assessment to cover the entire life cycle of the assessment process by semi-automated and automated approaches. In this paper we focus on the automated process to create different types of test items out of textual learning content, more precisely to create single choice, multiple-choice, completion exercises and open ended questions. Started in previous research activities by applying statistic approaches to summarize learning content and to identify most important words, our most recent approach applies a combination of statistic and natural language processing as well as semantic methods to identify most important concepts on an abstracted level. In our enhanced approach, identified concepts and differently related concepts represent the underpinning input for the test item creation. The implemented prototype can process learning content stored in various file formats, extracts most important content and related concepts, creates different types of test items and reference answers, and supports online assessments as well as exports the test items in QTI format. In this paper we cover in particular the following aspects: the motivation for automated test item creation, related work, requirement and design of the enhanced tool, implementation and usage viewpoints. Furthermore, we outline a study on the evaluation of the prototype, which suggests that the quality of extracted concepts and created test items is comparable with such ones provided by humans.

**Keywords:** e-assessment, automated test item creation, distance learning, self-directed learning, natural language processing, computer-based assessment

**Student Perceptions of a Second Life® Virtual Patient to Complement More Traditional Forms of Clinical Education**

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**Abstract:** The school of Health and Bioscience at UEL has been active in the virtual world Second Life (SL) for some time, an area of particular focus being the development of a virtual patient system for use by students of various healthcare disciplines. To date, the virtual patient is deployed within an outpatient facility and a respiratory ward to enable herbal medicine and physiotherapy students respectively to practise their clinical reasoning skills prior to or alongside exposure to real patients. Plans are also in place to extend the activities to other healthcare disciplines including podiatry. This paper describes quantitative and qualitative evaluations of the student
experience of both SL in general and the virtual patient in particular using Likert scale questionnaires, reflective diaries, discussion fora and focus groups. Most of the study focuses on herbal medicine students, the first to be exposed to the facility, but it also includes survey data from physiotherapy students who used the second iteration of the virtual patient. We wanted some comparative data on students’ first impressions of the SL environment; hence psychology students using Second Life for other purposes were also surveyed. Consistent with other literature on staff and student perceptions of SL, indications to date are that students find SL a demanding but worthwhile learning environment and that the virtual patient in particular is a very useful adjunct to other forms of clinical training be that in the classroom or the live patient setting. The success or otherwise of this early work will depend on a continued commitment to build on the experience to date not least by addressing the two key challenges of new case creation and enhanced communication mechanisms between avatar and patient.

Keywords: second life, virtual worlds, virtual patient, evaluation, health, simulation

Blended Learning as a Form of Modern Language Teaching

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Abstract: Traditional education assumes that all students are satisfied with the teacher’s oral lecturing and that everybody understands the teaching matter at the same pace and that everybody is willing to study the teaching matter at that very moment. But in fact, this is not always the case. Thanks to the use of ICT (Information and Communication Technology), which has penetrated into the traditional education, these discrepancies can be satisfactorily removed. This is, for example, true for the use of e-learning. When exploiting this technology, students can proceed a course at their own pace, they can decide on their own way of progress and they can also revisit the lecture topics whenever they want to. Therefore, they have more choices when they learn any teaching matter. Moreover, it means that they are much more willing to study and they are ready to devote to their studies. A sequence of well-thought questions might get them also involved in it. And this might increase their efficiency to study very significantly. Nowadays, one of the most common teaching approaches, and particularly in the teaching of foreign languages seems to be blended learning (BL). BL is seen as a combination of traditional face-to-face teaching and e-learning. Contemporary theories distinguish two basic ways of teaching which can be combined in blended learning: synchronous and asynchronous teaching. The synchronous teaching proceeds in real time. All its participants accept the presented...
experience during this time and can react together. One kind of synchronous teaching might be face-to-face teaching. All students and their teacher are present in the same place and at the same time. Another kind of synchronous teaching might take place in a virtual classroom where all the participants can meet and react by means of different synchronous technologies at the same time although they are in different places. The asynchronous teaching is usually held at different times, students can choose their own pace and the way of receiving information, but also they cannot react to each other at this chosen time. This type of teaching uses, for example, printed manuals and books, audio-records, video-records or online courses. Therefore, the purpose of this article is not only to describe differences between the traditional classes and online classes, but to examine the most suitable approach to the teaching of foreign languages, which is blended learning. In addition to that, the article emphasizes its benefits and demonstrates its contribution on a small-scale survey conducted in German courses at the Faculty of Informatics and Management in Hradec Kralove, Czech Republic.

**Keywords:** blended learning, foreign language teaching, WebCT, LMS, online course

### The Felder Silverman Learning Styles of Ergonomics Students

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**Abstract:** Traditionally engineering education is predominately verbal, but many students of engineering courses have a preference for visual instruction. Ergonomics as a discipline is underpinned with a mix of engineering, science and psychological fundamental concepts as a backbone to evaluation and design orientated practice in industry. But higher order learning is often not achieved, if at all, in the classroom environment. Alternatives approaches such as Problem Based Learning offers solutions to this problem but it is resource intensive and not suitable for distance and self directed learning. This presents the problem of informing instructional design for blended learning approaches targeting the acquisition of higher levels of learning specific to ergonomics skills. The paper presents results of an analysis of learning styles of ergonomics students studying full time at undergraduate level and separately a group of students studying part time in industry. The purpose of this work is to inform the structure and design of a training model for ergonomics instruction which meets the skills needs in industry while considering the preferential learning styles of the students.

**Keywords:** learning styles, blended learning, ergonomics
Connectivist Approaches to Student Evaluation
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Abstract: Connectivism is a modern theory of education that innovatively describes the role of technologies and the related social networks in education. Connectivist approaches prove to be very beneficial and their popularity is permanently growing. Paradigms of connectivism, as defined by George Siemens and Stephen Downes, are not only concerned with how to teach. They also deal with the issue of what the teaching goals should be. In consequence they have effect on how students’ results should be evaluated.

- Capacity to know more is more critical than what is currently known.
- Ability to see connections between fields, ideas, and concepts is a core skill.
- Currency (accurate, up-to-date knowledge) is the intent of all connectivist learning activities.

If teaching goals and core competences that students are supposed to acquire are perceived in this perspective, students’ results can no longer be evaluated by the classical method that predominantly assesses the quantity of knowledge acquired and of algorithms mastered. The presented examples come from pre-service training of teachers of mathematics in regular courses, using the blended learning support LMS of the Moodle system. The author explores the issue of evaluation of students’ work in the environment LMS Moodle. He presents his experience with the use of the different tools that the environment offers – Forums, Wiki, Enquiries, Questionnaires and Tests and the ways these tools may be used in student evaluation. A separate chapter is devoted to the issue of posing problems suitable for solving with the use of information and computing technologies. The author’s experience shows that it is essential that the level of difficulty of the problems be such that they cannot be solved easily using ITC, especially with CAS systems. They must simultaneously test the student’s current state of knowledge and his/her ability to apply the acquired knowledge in new contexts.

Keywords: Connectivism, evaluation, CAS, On-line tools, on-line testing
Diversity and Conformity in the Use of Technology by ‘Net Generation’ Learners; Exploring Research Outcomes to Inform Future Academic Practice

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Abstract: A number of names have been given to the generations born in the last 50 or so years, which have sought to identify characteristics of those born in those eras. Most recently we have seen the ‘Net Generation’ coined by the Oblingers at Educause for those reaching maturity after the year 2000, to define the current university generation and their dependence on the internet. Elsewhere the assertion for an identifiable ‘digital native’ type was proposed by Prensky, (2001). This latter view has been firmly challenged recently and a number of researchers now assert that the reality of the learners’ experiences of using technology is diverse and complex rather than simplistic. The author considers how learner diversity can and does extend beyond age, gender, access to technology and cultural background and leads to a rich diversity of the learner and their engagement with learning technology. At the same time there are clear arguments for asserting some conformity in the outlook and practice of university students regarding the importance of technology in their lives. Many students accept apparently unquestioningly the ubiquity of technology in their lives and as discussed below mix being online for leisure and learning all through their day. In this paper outcomes from a research project carried out in a technology-rich university, where student users first kept video and audio diaries to reflect on their use of technology for learning are shared. Most recently a selection of these students have been interviewed and invited to reflect on the role that technology occupies in their lives as they complete undergraduate studies. They were invited to reflect on their experience of different pedagogic styles and the amounts of technology used by academics and by themselves for their private study. This was in addition to their experiences of both blended learning within a face-to-face taught environment. The results shared in the paper have shown a certain conformity regarding the importance of access to technology in their personal and study lives, however these students’ preferences for pedagogic style have varied surprisingly. The diversity is indeed more complex than previously expressed.

Keywords: blended learning, pedagogic style, student experience, technology use
Web 2.0 Practices for Peer Assessment Processes: Exploring the Synergies and Tensions

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Abstract: The participatory practices (Jenkins 2006) surrounding web 2.0 services at first sight appear attractive to harness for the purposes of peer assessment (Falchikov 2007). But specifically what practices act as enablers for effective feedback (Nicol & MacFarlane-Dick 2006) and what tensions occur when web 2.0 practices for peer assessment are introduced into formal teaching and learning settings? This paper seeks to shed light on these questions through presenting, analysing and discussing the findings from a small scale participatory study in which two cohorts (n=18,n=15) of first year undergraduate students created, peer reviewed and assessed each others’ digital story (McDrury & Alterio 2003) productions using the Voicethread web 2.0 service (http://voicethread.com). A key component of this innovative assessment practice (now in its second year) is the central role of the student, specifically in negotiating appropriate assessment criteria. A critical evaluation of data from student surveys, focus groups and comments left as peer feedback will be used to discuss insights into: The impact on the student experience of adopting web 2.0 practices for assessing their peers. The extent to which the affordances of the web 2.0 service enabled or constrained the assessment. In the light of the findings from this study the paper will conclude by exploring the usefulness of the concepts outlined in the ‘big ideas’ (Anderson 2007) in guiding the adoption of web 2.0 practices for peer assessment and whether any reinterpretation is helpful when deploying web 2.0 services for assessment in formal academic contexts.

Keywords: peer assessment, feedback, web 2.0, Voicethread, digital story

Using YouTube and Podcasting to Enhance Teaching and Learning Arabic as a Foreign-Language for Adults Listening Skills

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Abstract: Teaching listening skills to foreign-language adult students is an art in which students listen to their teacher, but also to a wide variety of recorded materials which may include advertisements, news broadcasts, songs and poetry. In the past, the quality of the tape recorder was almost as important as the tape itself, but with the advent of Web 2.0 applications such as
YouTube and podcasting, such concerns have largely been rendered moot. For adult students of Arabic as a foreign-language, the difficulties are compounded because students must in fact learn two languages: standard Arabic which unites Arabic speakers and is spoken in news broadcasts, documentaries and speeches; and colloquial Arabic which consist of any number of dialects and can only be learned by listening because for the most part they are not written. Many academic universities concentrate on teaching reading skills when they teach standard Arabic as a foreign-language for adults and pay little attention to listening skills, although this varies from institution to institution. As for colloquial Arabic, some universities teach mostly Egyptian Arabic while private language institutes may offer a combination of standard and colloquial Arabic. This paper demonstrates how YouTube and podcasting can enhance teaching listening skills in both standard and colloquial Arabic, while showing how students can use these two innovations to take charge of their own learning. Furthermore, it shows how YouTube and podcasting can be used for all levels of language learning and teaching from beginning to advanced levels.

Keywords: Arabic as a Foreign-Language; YouTube; podcasting; listening; student-centered learning

Evaluation of Quality of Learning Objects: Several Scientific Approaches

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Abstract: The aim of the paper is to present the scientific model and method for the expert evaluation of quality of learning objects (LOs) paying especial attention to LOs reusability level. The activities of eQNet Quality Network for a European Learning Resource Exchange (LRE) aimed to improve LOs reusability of European Schoolnet’s LRE service for schools are analysed in more detail. As a pan-European service, the LRE particularly seeks to identify LOs that can “travel well” (i.e., reusable) across national borders and can be used in a cultural and linguistic context different from the one in which they were created. The primary aim is to improve the quality of LOs in LRE. eQNet will do this by establishing a network consisting of researchers, policy makers, and practitioners (teachers) that will develop and apply “travel well” quality criteria to both existing LRE content as well as that to be selected in future from national repositories. The vision driving the LRE is that a significant percentage of high quality LOs developed in different countries, in
different languages and to meet the needs of different curricula can be re-used at European level. The main problem of all existing approaches in the area is a high level of the expert evaluation subjectivity. The authors analyse several scientific approaches, theories, methods, and principles to minimise the subjectivity level in expert evaluation of LOs quality, namely: (1) multiple criteria decision analysis approaches for identification of quality criteria, (2) technological quality criteria classification principle, (c) fuzzy group decision making theory to obtain evaluation measures, (d) normalisation requirement for criteria weights, and (e) scalarisation method for LOs quality optimisation. The authors show that the complex application of these approaches could significantly improve the quality of expert evaluation of LOs and noticeably reduce the expert evaluation subjectivity level. The paper also presents several examples of practical application of these approaches for LOs quality evaluation for Physics and Mathematics subjects.

**Keywords**: learning objects, multiple criteria decision analysis, quality evaluation, reusability, optimisation

To Deal With Fluidity in the Networked Society - Self-programming as a Digital Literacy Competence

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**Abstract**: In the globalized economies e-permeation has become a basic condition in our everyday lives. ICT can no longer be understood solely as artefacts and tools and computer-related literacy are no longer restricted to the ability to operate digital tools for specific purposes. The network society, and therefore also eLearning are characterized by fluidity and the key competence for social actors in this ever changing e-permeated environment is the ability to cope with change - or Castells’ conceptualisation self-programming. Castells’ theory has influenced international definitions of future key competencies. Both lifelong learning and digital literacy understood "bildung" have emerged as central for the definitions of and standards for future key competencies. However, definitions and standards only tell us about the desired destination and outcome of digital competence building. They tell us nothing about how we may get there. In the educational system ICT and e-learning are becoming an everyday condition and the basic challenge for the educational system is twofold: 1) The actually making of digital literate and self-programming social actors – students and teachers; and 2) How to develop adequate designs for teaching and learning for that purpose. We need research that aims to describe the phenomenology of acquiring digital literacy and self-programming in order to be able to identify
relevant learning objectives and scaffolding. Findings from such studies are expected to be relevant for eLearning scenarios as well as for ICT and designs for learning in general. This paper presents a case study that aimed to explore the phenomenological appearance of self-programming as agency and learning among postgraduate students who participated in a specially designed eLearning workshop in the autumn 2009. The findings relate to both the individual and collaborative barriers and proactive strategies that come into play among the students. Drawing on the findings, it is argued that the presented workshop design contributes to the networked society’s design for ICT, teaching and learning, as the design – at least for this small group of students – have proved to support the development of digital self-programming as a sustainable competence. In the autumn 2010 the study will be expanded to a larger group of students.

**Keywords:** Self-programming, lifelong learning, networked society, design for teaching and learning, eLearning

**Perspectives of Online Education**

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**Abstract:** The objective of this article is to bring up a reflexion on the nature of online education and its specific characteristics. The reality and development level of Information and Communication Technologies are both fundamental for the success and maturity of more evolved teaching processes.

These processes assume themselves increasingly as facilitators and active agents of the diffusion of knowledge.

**Keywords:** Online, education, e-learning

**Using a VLE for Efficient and Effective Feedback**

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**Abstract:** There are concerns that traditional assessment has more to do with accountability and quality control than with providing feedback for learning. Many have recognised that feedback is the most important aspect of assessment for increasing student achievement. However, many surveys show that students are dissatisfied with the feedback they receive. It has
been argued that traditional written feedback is not the most effective for students or efficient for staff. This paper investigates a simple, VLE-based system that improves the effectiveness and efficiency of feedback which also increases transparency of the assessment process. The system was used for feedback of an experimental report assignment for level 5 (year 2) undergraduate students. All the descriptors were made available on the university VLE (WebCT). Students were able to see the descriptors of the mark bands and weighting for every section of the report before and after submission. The feedback consisted of a brief personal comment followed by a mark for each section of the report. The system was well received by both staff and students. Staff found the system quick and efficient. A questionnaire showed that the majority students approved of the system and found it more informative, more helpful and more transparent. Most reported that it encouraged them to review their work more. Of the minority (13%) who mentioned some dissatisfaction nearly all claimed the system was impersonal compared to traditional feedback. The evidence suggests that feedback was efficient (it took less staff time than writing the same long comments), effective (students understood feedback and were able to act on it), engaging (it required active participation and allowed students to make their own judgements about their work) and transparent (as the mark bands used in marking were available to students).

**Keywords:** feedback, VLE, assessment

**Soap User Modeling: A Sharable Open Adaptive Profiles**

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**Abstract:** New technologies create possibilities for the appreciation of e-learning content to a larger audience. While the number of challenges in the application of these technologies is still considerable, their potential justifies the effort required for their application. These technologies can provide an intelligent nature for e-learning systems and facilitate the adaptation/personalization of learning content and learning tasks. This intelligent or adaptive nature can be provided by relying on what is usually called user models. Researchers in the e-learning community have always considered it important to develop a model of the learner that contains important information that can be used to adapt the system according to learners’ needs. Surprisingly, most of the existing proposed user models are not comprehensive enough and lack many features. More research should be devoted to develop a comprehensive user model to assure the gain of the
most benefits of adaptation. At present, most adaptive systems use local user models and are not able to deal with external user models. Moreover, existing user models neglect an explicit support for information imperfection and prevent users from editing their own information. In this paper, we present a flexible and comprehensive multi-layer user model based on the IMS Learner Information Package (LIP) standard to assure interoperability and reusability across different e-learning systems.

**Keywords**: user modeling, learner profile, adaptive learning, open user modeling, learner information package

**A Gender Based Study for eLearning in Pakistan**

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**Abstract**: The purpose of this paper was to highlight the problems affecting male and female students in eLearning in Pakistan. E-Learning is not a new phenomenon in Pakistan. A number of studies have been carried out to assess the impact on eLearning (Hellsten, 2006; Siddiqui, 2007; Guadrado-Garcia, Ruiz-Molina and Montoro-Pons, 2010; Chu, 2010). However, to date no study has focused specifically on ‘gender differences’ affecting the development of eLearning and how these factors can be overcome. This paper has identified a number of gender problems associated with eLearning in Pakistan. It has measured the degree to which these factors affect male and female students. This paper has concluded with a number of practical recommendations for improving eLearning and how these gender differences can be overcome. This comparative study has compared and contrasted an equal number of male (125) and female (125) school leavers (age 16) in ten (five girls schools and five boys schools) state schools in five different cities (Lahore, Karachi, Islamabad, Multan and Bahawalnagar) across Pakistan. The data was collected through 250 online completed questionnaires sent to school leavers through a survey software (SurveyMonkey). These matched samples were used to identify and explore the root causes affecting male and female students in eLearning development. This was followed by six in-depth semi-structured interviews (three male and three female students) in order to gain a comprehensive understanding as to why these various issues in the questionnaire disadvantaged the use and development of eLearning. The results confirmed that there is a great scope for eLearning development in Pakistan. The findings showed a positive attitude among students regardless of their gender in consideration of using eLearning either currently or in the future. However, male students have tended to be exposed and encouraged more in the use and development of eLearning as compared to female
students. Thus, a number of problems have disadvantaged many students from taking full advantage of eLearning and its benefits. The originality and the novelty of this paper is the distinctive methodological framework adopted. No other study (to date) has conducted a comparative study of male and female students in terms of eLearning development. There is only a limited amount of work available on eLearning and gender related factors, this paper therefore seeks to fill this gap and contribute to knowledge in the ICT sector.

**Keywords**: Learning, gender, Pakistan, education

**Discovering Student web Usage Profiles Using Markov Chains**

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**Abstract**: Nowadays, Web based platforms are quite common in any university, supporting a very diversified set of applications and services. Ranging from personal management to student evaluation processes, Web based platforms are doing a great job providing a very flexible way of working, promote student enrolment, and making access to academic information simple and in an universal way. Students can do their regular tasks anywhere, anytime. Sooner or latter, it was expected that organizations, and universities in particular, begin to think and act towards better educational platforms, more user-friendly and effective, where students find easily what they search about a specific topic or subject. Profiling is one of the several techniques that we can use to discover what students use to do, by establishing their user navigation patterns on Web based platforms, and knowing better how they explore and search the sites’ pages that they visit. With these profiles Web based platforms administrators can personalize sites according with the preferences and behaviour of the students, promoting easy navigation functionalities and better abilities to response to their needs. In this article we will present the application of Markov chains in the establishment of such profiles for a target eLearning oriented Web site, presenting the system we implemented and its functionalities to do that, as well describing the entire process of discovering student profiles on an eLearning Web based platform.

**Keywords**: eLearning web based platforms, web usage profiles, clickstream analysis, Markov chains
Assessing eLearning: Finding a Model for Higher Education
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Abstract: Like every form of education or training, eLearning must be assessed with respect to various criteria, bearing in mind that it is undergoing a constant process of improving and progressing towards its goals. However, it is difficult to define a single model for assessing eLearning as technology is evolving all the time, in addition to the fact that Web 2.0 has created new ways for internet users to relate to each other. It will therefore be important to analyse the ways in which assessment 2.0 of eLearning is undertaken, bearing in mind that it will correspond to an evolution in the assessment of the mode of eLearning that could be designated "eLearning 1.0", whose most important points are described below. In assessing eLearning, it is often tempting to compare it to exclusively presentational models, ignoring the fact that eLearning is about what could be called e-pedagogy, in which new standards of communication, collaboration and group behaviour co-exist. In eLearning, new models of learning are used that involve the way that learners interact not only among themselves but also with the educational resources available, both online and offline, resulting in a change in the way that they perceive the learning context in which they are involved. The evaluation of eLearning should therefore be tackled in a very pragmatic way. It should be appropriate to the learning project in question and not become a highly complex study resulting in a large amount of complicated data, in which the aims of the evaluation end up being unclear to users. A proper assessment of eLearning must therefore have objectives, indicators, and goals that are explicit and easy to grasp, making it possible to respond to the questions that users wish to see resolved. Above all, it should create methods of presenting the results of the assessment in a way that is easily understood by all parties concerned.

Keywords: human resources, education, university, eLearning

Videoconference in Education at U.PORTO
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Abstract - The University of Porto (U.PORTO), through its New Technologies in Education (NTE) office has available since March 2005 a Videoconference Studio. This equipment is closely related to the dissemination of the videoconference technologies at U.PORTO. Only in the years of 2007 and 2008 this equipment has registered an increase of about 300% on its usage. Several efforts were developed by the NTE team that contributed to this high
usage. We highlight especially the fluidity on the service, the multifunctional usage, the acquisition and the development of knowledge in this field and the internationalization of this service. Various educations scenarios were implemented during these past years using the videoconference infrastructure. We highlight the pedagogical scenarios that became long structured pedagogical projects with more than a year long. We had the example of a curricular unit from a Master degree between our Faculty of Economics and ISEG (Lisbon). In this case we had about twenty students in our Videoconference room during two semesters and the teacher was in Lisbon. Another example was a Doctoral curricular unit that happen between our Faculty of Sciences, IST (Lisbon) and Carnegie Mellon University (USA). In this case we had a teacher and about five students in Lisbon, one class of about five students in the USA and one student in our Videoconference Studio. Recently it was implemented a new telepresence room (Douro HD Room) in last July 2009 and we will join this year a portable videoconference system that will offer a complete and different set of options in the videoconference field to all the academic community. With different characteristics between them, these three equipments from U.PORTO will allow an optimization in the videoconference service offer in all the University. This segmentation on the types of videoconference contents that these equipments can give can also boost the usage of these infrastructures in the University but can also boost the pedagogical use of the videoconference technologies in all the academic community. In the past years several activities supported by the NTE team were developed in collaboration with several international institutions and even with the integration in international organizations with high experience with videoconference. This integration permitted to increase the knowledge in this field. This internationalization component was very important to the high intensity in the usage of the videoconference infrastructure in the U.PORTO. We can say that with this offer and this experience it’s possible to create even more opportunities of usage, especially in the Videoconference Studio of U.PORTO (due to the multifunctional characteristics) on the usage to diverse, structured and constant pedagogical scenarios that can last several years.

**Keywords:** videoconference, telepresence, education, e-learning
Comparative Studies in Game-Based Language Learning: A Discussion of Methodology

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Abstract: Online game-based learning often takes place in a variety of contexts that define how teachers and learners can engage and interact with content and material. In research, these contexts of learning must often be conceptualised as comparative in order to understand how learning is enacted in different contexts. However, comparative methodologies can be difficult frameworks for understanding how and where learning takes place as learning games, actors and contexts are not stable. This paper discusses how comparative methodologies can be conceptualised in learning contexts where times and spaces for engagement in learning are shifting and multiply situated. Data are analysed in the context of an ongoing project in Serious Games on a Global Market Place where multi-sited ethnography is used for studying an online game based platform for language learning (www.mingoville.com) in a global perspective. Multi-sited ethnography conceptualises field work in settings of modernity and generally challenges the holistic understanding of time and cultural space in classical ethnography, i.e. the idea that actors, artefacts and cultural meanings are stable and can be studied within single sites over time. Findings indicate that comparative studies in global learning contexts must reconceptualise the boundaries and spaces within which game based language learning can be studied.

Keywords: game-based language learning, serious games, multi-sited ethnography, comparative studies

Teaching European Studies: A Blended Learning Approach

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Abstract: This paper will be looking into the teaching method developed by the Institute for European Studies in Brussels, combining an eLearning tool-the eModules- with face-to-face training sessions and webinars. The main aim is to analyse the three different components of this “blended learning” pedagogical approach, as well as the way they complement each other and to address a few of the challenges that have emerged from the experience of working with them so far. The eModules are an eLearning platform that has been designed with the purpose of offering a structured and interactive way of
learning how the European Union functions. The face-to-face training component currently takes the form of three days in-house seminars, covering in an intensive manner the most important areas of the curriculum. The lectures are held by a mix of academics and practitioners, ensuring a balanced approach, in which theory and practice come together to facilitate the learning experience. The third element of the “blended learning” method is placed in-between online and face-to-face learning: interactive seminars and debates are held online, giving the participants the chance to deepen their knowledge in certain fields of interest and to discuss the content of the course with specialists and among themselves. The mixture of delivery and interaction methods was chosen in order to accommodate a large variety of target groups, ranging from students to professionals working with EU-related issues, with different backgrounds and geographical origins. One of the main challenges is to use each medium for the functionalities it is best designed for and to ensure that the various pieces of the pedagogical puzzle fit together perfectly, while allowing the learners the flexibility that had initially directed them towards “blended learning” instead of a classical classroom approach.

Keywords: blended learning, eLearning, social sciences, European studies

Onscreen Marking - Saving Time, Saving a Tree Being Productive

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Abstract: This paper reports on the investigation and development of an onscreen marking tool for the marking of assignments at the University of South Africa (UNISA). Due to increasingly large student numbers, the assignments section is constantly under pressure processing large volumes of assignments in relatively small time frames. The Assignment section receives assignments in paper format via the postal services as well as digital documents via electronic submissions. Unisa implemented a Learner Management System (LMS) named myUnisa where digital submission of assignment is made possible. Students may either submit via the postal service or online on myUnisa. The digital submissions are printed, dispatched to academic staff for marking, and then this mountain of paper is returned to the assignment section which dispatches it back to the students. This is indeed an insurmountable task leading to assignments reaching students late, often after the final examination or in some cases disappearing in transit. As an Open Distance Learning (ODL) institution our students are not on campus and feedback on assignments is a critical component in the pedagogy. These pressures forced lecturers to use multiple choice assignments to increase the turnaround time by reducing the time required to
mark an assignment. The number of written assignments is reduced per course which does not bode well for good intentions of good teaching practices and several opportunities for providing feedback to learners that could aid learning. The purpose for developing this marking tool is therefore grounded in a search for a solution to reduce these processing bottlenecks when handling large numbers of assignments, reducing the turnaround time and keeping the levels of feedback high and constructive at all times. The paper describes how the scrum methodology was used to develop the tools and will also indicate how it assisted in obtaining buy-in from the academic staff. The paper also explains how the marking tool accommodates five different marking styles and how important it was for academics to have choices in how they mark onscreen. Feedback gathered from all the participants would determine the success of this project and provide the decision makers with sufficient information to consider whether this practice should become the mainstream methodology for marking written assignments.

**Keywords:** learner management system, onscreen marking, feedback, scrum methodology

**Effectiveness of Note Taking Activity in a Blended Learning Environment**

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**Abstract:** "Note-taking" is a popular skill for all types of learning activities. On-line educational systems and virtual learning environments are proliferating, without the need for printed materials. This means that students' ability to take notes may decline, as they prefer to use on-line methods. To examine this phenomenon, students' notes were assessed by a lecturer. Note-taking was surveyed during two economics courses which were taught by the same professor. These two courses were a blended learning course and a fully on-line course in a bachelor level program at a Japanese university. The lecturer also reviewed and assessed each student's notes after the sessions each week. Their learning performance was measured using on-line tests, written essays and a final exam. The total number of participants for the two courses was 199. There were 97 in the blended learning course and 102 in the fully on-line course. The note-taking assessment scores changed weekly, in accordance with the contents of the course. The assessment scores for note-taking correlate with essay report assessments and final exams (r=0.49) for the blended learning course, and
correlate with tests and final exams for the fully on-line course. These results confirm the effectiveness of note-taking in an on-line learning environment.

**Keywords:** note taking, blended learning, learning assessment, learning skills, correlation analysis

**Assessing Student Transitions During Blended Learning Activities**

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**Abstract:** Assessment surveys of students are often conducted in order to evaluate blended learning activities. Most surveys measure responses to questions which are based on students’ subjective impressions. The purpose of this study is to examine participants’ assessments made during the transitional phase in a blended learning environment at a Japanese national university. Students were enrolled in two-unit bachelor or master’s courses which were taught by the same professor and were blended learning courses. Students attended face-to-face classes and were also able to access on-line content outside of class. The total number of students with valid survey data was 159 (67 bachelors and 92 masters). A survey questionnaire which consisted of 10 questions measured the self-assessment of students’ on-line learning experience. E-learning evaluation, learning habits and learning strategies, three factors used for evaluating learning experiences, were then extracted and compared between questionnaire surveys. There are no significant differences in all factor scores between the beginnings and the ends of the courses, but there are significant differences in the third factor score, learning strategies, between bachelor and master’s students at both the beginnings and the ends of the courses. These results show the coherence of learners' assessments during the course. According to the study results, it is assumed that students make their own evaluations during the course. The correlation coefficients of the first factor scores (e-learning evaluation) between the beginnings and the ends of the courses are not high, however (bachelor: r=0.46, masters: r=0.35). Therefore, some participants have changed their evaluation between the two surveys. When the differences in factor scores between the initial and final surveys are compared between high and low raters at the beginning of the course, the scores for the high raters decreases and the scores for low raters increases. These results suggest that low raters at the beginnings of the courses have become satisfied with the blended learning environment, while the high raters have become discouraged.
Organizational Learning as a Guarantee to Survive and a Competitive Advantage for Universities

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Abstract: The higher education system has caused a great deal of changes in social, economic and political fields. In addition, universities are social systems which have been known as the centers of knowledge and information as well as the thinking bases for leading societies. Organizational learning is a commodity necessary to guarantee organizational survival and universities' competitive advantage in the complex and competitive world. Organizational learning is among the variables whose efficiency have been investigated and proved by various researchers. Therefore, in order to increase organizational learning in universities, it should first be measured through a valid instrument. Consequently, necessary managerial actions should be taken. The purpose of the present study is to validate a scale for measuring the organizational learning of higher educational institutes. The population of the study included all the staffs who were employed in all branches of Islamic Azad University in Iran (i.e., 420 branches and educational centers). The research sample consisted of 1662 staffs randomly selected from 96 branches and educational centers using stratified and cluster random sampling methods. The research instrument was the Watkins and Marsick’s questionnaire of organizational learning which consisted of 3 scales. The obtained Cronbach's Alpha value was 0.90. The results of factor analysis and principal components analysis, using a varimax rotation, showed that building blocks of organizational learning includes individual level (Items 1, 2, 3, 5, 6, 8, 9, 11, 12 and 13), group level (Items 4, 7, 10, 14, 15, 18, 19, 23, 26, 27, 28, 29, 30, 33, 35 and 37), and organizational level (Items 22, 24, 25, 31, 34, 36, 38, 39, 40, 41, 42, and 43).

Keywords: organizational learning, competitive advantage, survive, universities, varimax rotation
Using Social Software to Enhance the Student e-Learning Experiences and Activities in Higher Education

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Abstract: E-learning – almost by definition - uses advanced technologies to support the formation and development of students. Therefore, Web 2.0 applications have merged into the e-learning domain. Learning experiences in modern e-learning include collaborative aspects and active contributions to learning content. Thus, an e-learning using social network tools arises as a potential learning method. So, it should be questioned if the Web 2.0 applications, used in social networks, can play a positive role in e-learning, as long as professors give them the optimal use and students interpret them as didactic tools. For this purpose, the present paper gives give a consolidated review on how the concept of social networks has influenced e-learning communities. In conclusion, the paper  argues that the pedagogical potential of social software can perform the ability to create awareness between students, sharing information and resources that are originally developed for themselves, but made available to others.

Keywords: Collaboration; learning networks; e-learning; higher education; social networking, longlife learning

Using a Weblog as an ePortfolio Tool in Elementary School Essay Writing

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Abstract: This empirical, quantitative, multiple case-study explored the development of students’ writing performance through a one-academic-year (September 2007 to June 2008) implementation of learning portfolios in three fourth grade elementary school classes (N=63 students) in Cyprus. It explored how learning portfolio affordances, such as feedback, goal-setting, reflection and self-evaluation related to students’ writing performance over time. From a technological perspective, the challenge of the lack of availability of a portfolio tool in the Greek language was faced. The solution was a generic, open-source weblog tool (specifically WordPress), which was transformed and localized into Greek to be used as an ePortfolio tool. The students of one fourth grade class created ePortfolios (n1=20) while the students of another two fourth grade classes (n2=23, n3=20) created paper-based portfolios. A portfolio artifact analysis focused on a total of 514 student-
essays, 2822 instances of peer feedback, 3346 instances of teacher feedback, 477 goals, 308 self-evaluations and 162 reflections. The analysis of students’ pre- and post- implementation writing performance tests, and the portfolio artifact analysis revealed that students’ writing performance increased over time ($t (62)= -14.19, p<.05, \eta^2=0.77$). These learning gains were associated with specific portfolio affordances. The findings of this study regarding the relation of portfolios with students’ writing performance are of interest to education researchers. The study also produced practical implications on portfolio implementation that are of interest to teachers. It showed that most features currently implemented in ePortfolio tools can be supported in a weblog environment and demonstrated the feasibility and effectiveness of this idea in the elementary school context. The described open-source weblog ePortfolio tool can be used in different languages providing easy access to free portfolio tools for elementary schools worldwide.

Keywords: ePortfolios, weblog, writing-performance, elementary-school, reflection

Science, Sport and Technology - A Contribution to Educational Challenges

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Abstract: One of the major educational challenges, at all degrees, is how to improve students' ability to link knowledge with real life practice, through enhancing children or teenagers' ability to think critically by way of making observations, posing questions, drawing up hypotheses, planning and carrying out investigations, analysing data and therefore improve their decision making. Learning through sports can be effective for developing life skills because sport has a potential to contribute over a wide range and is a discipline that most children like. The constructions of real situations or “Problems” must achieve and incorporate certain aspects such as (a) encourage curiosity, (b) be perceived by students as relevant to their personal goals, (c) represent a motivated challenge, (d) stimulate group
collaboration for older students, (e) technological equipment as a way of support, to motivate the learning process, and (f) demonstrate how simple scientific concepts can improve everyday activities. The aim of this paper is to present and evaluate the usefulness of the representative tasks created by a systematic integration of approaches (electronic and non-electronic devices) with interactive situations. Four tasks were applied to 140 children between 6-10 years old at elementary school level. The tasks were constructed considering the follow proposals: (1) promote the benefit of physical activity and (2) explore some science concepts using sport. To evaluate the process effectiveness, two groups were formed, group A was submitted to a more theoretical explanation of the concepts and group B was exposed to problem solving through sport situations. Data were analysed by using quantitative methods. Results show that when children participate in an active way they are more motivated, and the use of their own movement or body to resolve a problem (with electronic devices) contributes for knowledge acquisition by adapting their actions and looking for the best window of possibilities to solve the task situation. Further and longitudinal studies are recommended to consolidate the results.

Keywords: technology, Sport, task design, skills acquisition

Ontological Model for the Course of Photography

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Abstract: The course of digital photography is provided to students of different study programmes at the Faculty of Informatics and Management, University of Hradec Králové. Electronic learning materials were prepared for the course. These materials cover numerous topics, i.e. history of photography, specifics of different genres of photography, practical tips for users of digital cameras etc. Workflows for several software products (Adobe Lightroom, Zoner Photostudio, Photomatix Pro and Autopano) were defined and elaborated in learning materials. A large gallery of sample photos is part of these materials, too. We decided to analyze knowledge of photography from the point of view of knowledge management Explicit and tacit knowledge related to photographing is discussed in the paper. We want to use ontologies for better organizing learning resources and especially for addressing the problem of searching and browsing resources and tailoring the course content to needs of individuals. Our ontology will describe both the domain of photography and the domain of education (i.e. structure of courses). Two approaches were examined in the paper: reusing book indices and automated multi-word term extraction. Having the set of terms from the domain of photography (and the set of terms from the domain of education),
the ontological model is expected to be developed using CmapTools, then exported into XTM format and reused for the navigation in the web-based presentation of learning materials based on the Topic Maps ISO standard. **Keywords:** eLearning, ontology, photography, term extraction

**Effectiveness of Online Education and Learning Support for Medical Radiation Science Students**

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**Abstract:** Human Physiology is a course integrated into the curriculum for educating students in Medical Radiation Sciences. The subject is the basic foundation for further study in the program and is essential for professionals in this health care sector. However, the subject is also considered to be conceptually demanding even for students that take the course in the traditional in-class lecture setting (Rangel, 2010). Moreover, due to the explosion of user-friendly web applications, the student population is becoming increasingly literate in technology. Thus the student population in online courses and programs has expanded beyond just distance education but to include pre and current health care professionals (Tapsott, 2009). With this in mind, the incorporation of an online course for medical radiation sciences students was a natural evolution. The Online Basic Human Physiology Course provides more student flexibility in terms of time and location to learn the material and more support to facilitate student success. Course material (36 didactic lectures) was delivered to students in a video format that is available 24 hours a day for streaming. There are several sources of support for students in the course such as a 24/7 discussion board that is monitored by lecturers and teaching assistants (an academic and peer support network), virtual tutorials with a teaching assistant (java applet chat) and email to lecturers. Frequent online quizzes were effective in both enhancing the learning experience and improving student performance (Rao and Dicarlo, 2000). Analysis of course data, student surveys and course evaluations from the online course are comparable to the in-class course, suggesting that the online course is just as, or perhaps, more effective than the in-class course. Two cohorts of students (approximately 130 students per cohort) have completed the online Human Physiology course. Data from the 2009 online student cohort will be presented and compared to the in-class data. The framework of this course is flexible enough that it can be easily adapted in creating courses in other content areas and disciplines. **Keywords:** physiology, medical, radiation, online, learning, education
The Design, Development and Implementation of a VLE Based on Pedagogical Principles

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Abstract: This paper documents the experience of designing, developing and implementing a VLE, using the Moodle VLE platform, at a South Wales comprehensive school. As part of a joint initiative facilitated by the University of Cardiff and the University of Glamorgan called ‘Beacon Researchers in Schools’ a comprehensive cross-functional team was set up that included teachers, an ICT technician, a VLE technician and a project manager with appropriate expertise in pedagogy. Once the basic framework of the VLE was established, it was then tested via a research exercise that involved the science teacher and the pupils with an aim to determine the efficiency and effectiveness of the technology. In this experiment, a wiki section was constructed within the VLE. A class of KS3 top level, year 8 pupils (N=25) were required to log onto the Internet and undertake the necessary research to help address questions set by the teacher. Assuming a problem-based learning (PBL) pedagogical approach along with a constructivist epistemology, the pupils were then asked to post their research findings onto the wiki. This exercise helped to develop research and analytical skills as pupils sought to find necessary online material and determined what information they deemed as authentic and relevant to the task. The pupils were then required to edit the postings of their peers. Overall, a successful outcome has been achieved and at a very low cost in an environment of tight budgetary constraints. The pedagogical design of the VLE was therefore vindicated and serves as a platform for further development thereby providing significant future benefit to the school and its pupils. This study will be of interest to researchers, teachers, VLE developers and pedagogical experts. It is believed that this experience will enhance the ever-growing pool of knowledge in terms of VLE design and its pedagogical underpinnings.

Keywords: VLE, constructivism, eLearning, schools, pedagogy, problem-based learning
Education Project About Climate for Multi-User eLearning Courses

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Abstract: ELearning as the use of new multimedia technologies and the Internet is widely used to improve the quality of learning by facilitating access to resources and services as well as remote exchanges and collaboration. ELearning makes it possible to adapt education to individuals’ needs, including disabled learners. Development of new learning styles markedly supports the development of the knowledge and information society and the abilities to search and process information, as well as transformation of this information into knowledge. ELearning also poses the advantage of high-quality feedback as part of learning process, including lifelong learning. The main aim of the research project Education model of eLearning for lifelong learning in selected branches of environment (E-klima) is to create eLearning courses with a thematic focus on the climate and its change consisting of up-to-date and accurate information from the field of climate change and environment. The main objective of the courses is to provide educational materials to various groups of users, focusing on natural and social sciences related to the climate, climate change and other Earth sciences. It was needed to make a methodology for the creation of eLearning courses and its concrete application to the E-klima project. The general part contained a description of ELearning as one of teaching forms, identification of its pros and cons and a comparison with other teaching forms - full-time and combined education. The thematic content of the courses reflects the expertise levels of the target group users (school, departmental, public). The course content encompasses two basic views on climate change, natural-science related (physical and geographic aspects), and social-science related (economic, legal and political aspects). The courses include not only traditional forms of study materials (texts, images, diagrams, tables) but also new, modern forms of presentation of information (digital maps, satellite images, digital data bases, Internet sources).

Keywords: eLearning, education model, E-klima, climate
An Approach to Diversity: The Effectiveness of IPTEACES eLearning Framework

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Abstract: Effectiveness, a major concern in corporate eLearning, is particularly decisive when projects face financial as well as time-to-market constraints and when they target a diverse social-demography and geographically dispersed range of attendees. This paper proposes and illustrates a new instructional design Framework, designated as IPTEACES, to facilitate eLearning by reducing diversity in programmes facing a non-homogeneous audience. More specifically, this paper describes the outcome of a case study on the application of IPTEACES framework to the insurance intermediaries’ certification course in Portugal (concerning the period January 2008 to March 2009 with a total of 3726 certified intermediaries from sixteen different corporations connected with insurance and banking industry). IPTEACES framework was primarily inspired through a pedagogical benchmark as well as in the study of award-winning eLearning courses and corporate eLearning best practices (especially regarding the use of multimedia). With this framework in mind, we’ve conceived and designed an instructional design approach that could materialize, largely on a single approach, an appropriate learning strategy for different learners in order to fit the different learning preferences and also to respect other specific differences: an approach to diversity. From preliminary results achieved, it can be concluded that it has been accomplished the creation of a pragmatic and straightforward instructional design framework that can be an explored and applied worldwide in many eLearning projects that face significant diversity in their attendees. This framework has produced results that are considered to fulfil the typical main objectives of an eLearning project: high approval rate, low drop out rate and high level of satisfaction from the students. In this insurance intermediaries certification project, in the period under review, we’ve achieved an approbation rate of 95%, a failure rate of 4,9%. Concerning the drop-outs, 0,7% did not conclude the educational process. The analysis from the survey of evaluation of satisfaction, learners were satisfied or very satisfied with the e-course and with the eLearning format, ranking their answers over the point 3 of the scale (on a scale 1 to 4).

Keywords: eLearning effectiveness, eLearning framework, instructional design, insurance intermediaries
A survey of Adult Education Campi in Second Life

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Abstract: While much information is available on pedagogic uses of virtual worlds, with Second Life being the most common virtual world platform in current educational literature, an organization must consider its presence in this environment as more than the mere sum of individual educational efforts. Resources need to be shared between educational stakeholders, visual navigation needs to make sense, and the sense of being within an actual organization should be conveyed (not just the sense of being within a collection of personal spaces). But there is little information on how a virtual campus for an educational organization should be structured. Virtual campi in Second Life for adult education institutions don’t typically reproduce their physical counterparts. While spaces such as lecture halls, amphitheatres, meeting places, and libraries are commonly found, the specific features of the medium imply an organization of spaces and usage that differ from physical campi. For instance, navigational affordances are different (ability to fly and gravity-immune objects, for instance), as are communicational features (specific limits on the reach of voice and text communication), and user involvement (how students and teachers use the spaces). We conducted a survey of several existing Second Life campi of adult education institutions (mostly universities), to establish what spaces are present in each and how they are used and organized. In this paper, we present the overall process, and the structure and instructions for data collection by all people involved. Then we detail the various kinds of spaces (by function, not by aesthetic) found in the campi and their prevalence. We also present data on user-oriented features of the campi, and cross-analyse this with their occurrence per space and campi. This survey was part of the process for specification and development of the virtual Second Life campus for project VITA, a EC-funded project to create and experiment learning actions directed to SME' managers for development of entrepreneurship competences. Thus, we conclude with an example of how the survey results can be used to support the development of campi, by briefly presenting the campus that was developed specifically for this project.

Keywords: Campus, virtual campus, Second Life, design, development, VITA Project
Towards a Holistic Conceptual Framework of Learner Engagement in CSCL Environments

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Abstract: Collaborative Technologies (CTs) have been widely perceived as the force that can lead to significant educational outcomes and support students’ skills and knowledge development. Recent literature in Computer-Supported Collaborative Learning (CSCL) advocates that the introduction of novel CTs in the curriculum has the potential to increase student engagement in learning activities. However, there is insufficient empirical evidence into what constitutes learner engagement and how students reason about their engagement and the factors that may affect it. Is ‘engagement’ an inherent attribute of CTs or are there other, more subtle, factors that may enable or hinder student engagement in CSCL? In the literature there is also limited number of empirical studies in postgraduate education. With the escalating number of graduates moving into postgraduate education there is a need for a deeper examination of learner engagement and the mediating role it plays in learning practices. The paper attempts to fill these gaps and conceptualise learner engagement drawing from a collective, longitudinal case study. The study was conducted between October 2008 and March 2010 and the participants are postgraduate students studying in the interdisciplinary degree of Business Information Systems. Information was gathered from a combination of methods including participant observation; focus groups with students; examination of student participation on blogs; video-recordings of students working in CSCL activities; and questionnaires. The collected information is analysed with the view to develop a holistic conceptual framework for understanding learner engagement in CSCL environments in the context of postgraduate education. The aim of the proposed framework is two-fold: firstly, to conceptualise the process of learner engagement in CSCL activities and secondly, to provide practical recommendations to help educators (a) understand the need to move beyond the technological affordances of collaborative technologies and take a holistic approach in order to support learner engagement; (b) accommodate diverse types of learner engagement, not just diverse learning styles; and (c) cultivate the technological, social, and pedagogical aspects of CSCL.

Keywords: learner engagement; CSCL; collaborative technology; postgraduate education; collective case study
eLearning at Czech Universities in 1999 - 2010

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Abstract: In 2001 the European Commission announced eLearning to be a strategic plan for developing new trends in gradual and lifelong education. Similar to this, in the Czech Republic strong emphasis has been put on education and improving competences in the field of ICT and foreign languages since the beginning of this century. These decisions led to substantial changes in the educational concept on university level. A wide range of agreement and disagreement with new educational approaches could be seen both across the whole system and insight single institutions. Teams were established dealing with the process of eLearning implementation in the tertiary education, at the beginning being very informal, joining enthusiasts, and their activities were hardly supported. Pioneering eLearning activities in this period were usually financed from various, mostly European projects. Despite the starting troubles the awareness of possibilities provided by eLearning was spreading slowly but steadily. Nowadays there exist university departments specialized in eLearning and its implementation into the process of instruction. There was also established a system for funding eLearning activities so it does not depend on random effort of single employees any more. These trends have step by step resulted in both quantitative increase in ICT implementation and related activities in tertiary education, and in substantial shift in quality of formal and informal view on eLearning. Despite the starting problems in the last decade, eLearning has become a standard in tertiary education. The eLearning forms of instruction at universities can be used in both gradual study programmes and lifelong education. eLearning can be applied in the distance study programmes, in the combined (part-time) form of instruction or supporting present lessons (blended learning). In 2009 a research “Evaluation of the modern technologies contributing towards forming and development university students’ competences” focusing on eLearning implementation at Czech universities started, being supported by the Czech Science Foundation. There are 26 public universities accredited in the Czech Republic. Annual reports of these universities were the main source of information for this research.

Keywords: eLearning, eLearning polices, infrastructure, Learning Management System, research, university education
Freeware Authoring Tools for e-Content – Current Experience
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Abstract: e-content plays an important role in eLearning since the latter relies significantly on the former. Furthermore, e-content and eLearning face a number of challenges in producing viable modules for information enriched society and institutions. Hence, eLearning developers feel the need, for instance, to increase collaboration among learners, to create relevant practical activities for learners to participate in and to create content that today’s learners will find engaging. This represents an essentially intellectual and creative challenge, which is, basically, to produce imaginative, engaging and interactive designs that work with the browsers used by the target audiences, within realistic bandwidth constraints. Most of the professional development studios use their programmers to create custom tools that suit their own working methods and styles. In-house units and individual eLearning developers are much more likely to employ tools, which help them to avoid the technical minefields and concentrate on the realisation of their designs. For this purpose, eLearning authoring tools do have their advantages, as they make it easy for eLearning developers to employ a relatively wide range of interactive techniques and to have their content communicate with a Learning Management System (LMS) at moderate costs or even for free. The use of such tools may imply some loss of flexibility since the easier the tool is to use the less one can do with it. However, the real worth of eLearning content is in the design and the writing, so, in our view, one should accept sacrificing a little flexibility if it implies a sensible budget and timetable. Based on our current use of freeware authoring tools (such as eXeLearning, Xerte or CourseLab), they seem to have the right functionalities for the production of engaging Learning Objects (LO) and a way of delivering the end-product that conforms to the hardware and software capabilities of my audiences. In sum, we would like to demonstrate with my current experience as eLearning developers how subject-matter experts may work directly with these tools, to populate the templates with content. For maintenance, this content may be stored in a database, although for delivery it may be converted to standard HTML.

Keywords: e-content, freeware eLearning authoring tools, learning objects, distance education
MLearning: A Tool to Support Learning Processes in Portuguese Educational Context

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Abstract: The developments of Information and Communication Technology (ICT) have contributed to a significant change in our society. Nowadays, the society is increasingly dominated by technology, where all are directly or indirectly dependent of the interaction with ICT (Menezes et al., 2009). In this context new solutions must be found. These technologies, led to a new forms of learning encouraging the use of mobile technologies, providing students a ubiquitous learning environment that they can explore to improve their learning experience. The use of Mobile Technologies opens new possibilities for the teaching and learning processes, taking us to a new reality, called Mobile Learning or mLearning. The mLearning in this work is defined” as learning processes that occur, necessarily supported by the use of mobile technologies and that has mobility as a fundamental characteristic of human actors, who may be physically / geographically distant from other actors and also the physical spaces of formal education, such as classrooms, training rooms or the workplace” (Bowker 2000; Koschembahr 2005). It is author’s intention to alert the ISEP’s academic community of the features in using MLearning. As teachers of the Computer Engineering Department, we feel the need to contribute to the development of applications that use this type of technology, ensuring that education be accessible to all. The present work conducts a research of mobile learning as a tool to support education in Portugal. At same time, the authors of the present work investigated existing solutions using mobile technologies to support learning process with emphasis in the use of mobile devices and analyze practical implications of design and education when they come into mobile virtual learning environments. This survey shows that mLearning is being adopted on a trial basis in the academic environment, despite some resistance in adopting new technologies and practices of teaching and learning. The mLearning has organizational, structural, social and technological implications. This analysis provides information to enrich the knowledge in virtual environments field with the incorporation of mobile devices, which can be the starting point for future studies.

Keywords: distance learning, mLearning, mobile devices, education
Evaluating Training Results: Does eLearning Make a Difference for Small and Medium Sized Enterprises

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Abstract: The purpose of this study is to define how businesses evaluate the results of the training they offer and to verify, through a multiple case study, the extent to which small and medium-sized enterprises in Atlantic Canada evaluate the results of the training they offer to their employees in order to have better trained employees and which tools they use. The purpose of the study is also to verify if they use eLearning tools to evaluate the results, and if so, why?

Keywords: eLearning, evaluation, evaluation tools, SME, training results

Reusable and Inter-Operable Web-Based Intelligent Tutoring Systems Using SCORM 2004

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Abstract: For several years Intelligent Tutoring Systems (ITSs) have been developed and shown to lead to impressive improvement in student learning in a range of domains. Some of the most important limitations of ITSs are that their development is very time consuming, and they cannot be reused or imported to different platforms. The main benefits of the Sharable Content Object Reference Model (SCORM) are interoperability and reusability. Based on the SCORM Sequencing and Navigation (SN) specification we have developed an approach for implementing Web-Based SCORM compliant ITSs that are therefore reusable and inter-operable. The main objective of this paper is to describe our approach and explain how to implement SCORM compliant ITSs using as an example, a prototype that we built.

Keywords: intelligent tutoring systems, adaptive learning, e-learning standards, SCORM, sequencing and navigation
Rock, Paper, Scissors: Overcoming Barriers to Changing Staff Practice in Technology Enhanced Learning

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Abstract: This paper describes a simple activity that can be used in helping team formation within academic change projects. The process of team building is vital whatever the potential future may look like, and whatever project(s) may come out of the envisioning process – be it the development of a new e-learning strategy, implementing new technologies or systems, or redesigning curricula to take advantage of the opportunities presented by e-learning. Using the approach described, project teams are given the task of expressing their vision of the challenges (or “rock”) confronting their project through a visual representation in the form of a poster (the “paper”). Rather than drawing a poster, the team works together to assemble images cut from magazines, sharing scissors as they work.

Keywords: change management, blended learning, teaching technology

The Impact of Technologies in a First Year Undergraduate Course for Social Scientists

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Abstract: LSE100 is a new course for LSE undergraduate students. It was piloted in 2009/10 with a cohort of 400 first year students and it will become compulsory for all first year students in the academic year 2010/11. ‘LSE100 The LSE Course: Understanding the causes of things’ looks at broad, current questions and issues across the social sciences. Topics include what caused the financial crisis, can we eradicate poverty and how we should manage climate change. Elements of the course have been designed to integrate technology alongside more traditional teaching practices of lectures and classes. It uses Moodle to provide students and teachers with a range of online resources and support. Other technologies used in this course, to supplement the routine automated lecture capture, are PRS, audio feedback and text messaging. This paper presents an evaluation of results from the pilot year and explores students’ attitudes towards the use of a range of technologies in teaching and learning. The data was collected through a series of focus groups, one to one interviews and surveys to examine how students view technologies and the impact that they have had on their
learning. Research from UCL (Rowlands et al, 2008) suggests that undergraduate students might have different attributes to earlier generations and have different approaches to learning. This paper will explore whether LSE students might be considered a ‘Google generation’ or display any characteristics that suggest they might be ‘digital natives’ (Prensky, 2001) in their approach to new technologies. One of the key learning objectives of the course is to equip students with information skills and other transferrable skills which will benefit them both in the rest of their time at LSE and afterwards in their careers. Online resources to support essay writing and to teach students to find, manage and evaluate information have been developed by staff in the Centre for Learning Technology (CLT) and the LSE100 course team. These resources, including an essay writing tutorial which helps student to understand what plagiarism is and how to avoid it, will be demonstrated in this session.

**Keywords:** Technology, technology and learning, audio feedback, technologies in undergraduate course; social science

**The Distance eLearning, Comparative Students´ Evaluation in 2005 – 2010: Example of University of Hradec Kralove**

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**Abstract:** Social and political development in the Czech Republic in last two decades evoked numerous changes in all spheres of the society, including education. General development towards democracy and information and knowledge society transformed the existing structure of the educational system; defined new competences reflected in the learning content; called for new teaching methods, organizational forms, and others. These features are slowly but steadily being included into the new educational system, which is hardly to be imagined without implementation of modern technologies. Collecting students’ feedback is a necessary part of the educational process on all levels so that we know whether the process runs effectively, in accord with didactic principles, matching preferred students’ learning styles and accommodating their needs and learning objectives. The paper presents results of monitoring the process of instruction provided in the distance way and supported by the learning management system (LMS) WebCT. Data were collected in 2004/5 and 2009/10 academic years. More than 100 students of bachelor study programme of Applied Informatics at the Faculty of Informatics and Management, University of Hradec Kralove, participated in the research. The data were collected from the questionnaire which was structured into three fields describing the process of instruction from the view
of students’ previous experience in university study, evaluating single tools provided by the learning management system supporting the instruction, and calculating financial expenses which are necessary to be spent on studying in the distance way. The questionnaire contained 45 of multiple-choice or open-answer questions. It was available in the LMS, where the findings were displayed. The learning management system has been used since 2001, data have been collected every year since 2003/4. The received results are presented in several tables and compared after the five-year period, which is understood to be long enough so that changes can appear in students’ attitudes in this field, if there are any. As expected, changes appeared in several items; they are discussed in the final part of the paper, and several recommendations are provided so that the process of instruction was optimized and ran effectively.

**Keywords**: distance education, eLearning, WebCT, feedback, attitude, evaluation

**STAR: A Collaborative Technology for Personalized Feedback in Learning**

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**Abstract**: The system of testing, analyzing and reporting (STAR) underlies the following components: the development of collaborative databases of items in several languages, the assessment of students’ knowledge and abilities in various school subjects by using tests from the databases, an individualized feedback to every student which is obtained by processing his/her answers following a multi-criteria analysis, and the improvement of student’s learning by offering new sets of questions situated in his/her range of proximal development. The databases of items are collaboratively developed, according to strict procedures. Briefly, the items are potentially submitted by any registered user in the system; then they are processed by experts, validated by editors, and finally, recorded in specific databases. Within this process, the items are classified according to general criteria (for example, degree of difficulty, key stage, recommended time of solving), criteria that are discipline-specific (for example, specific competences in problem solving), and criteria that are item specific (for example, length, number of figures). The system allows to add new criteria and to record the items in complex networks of connections while the databases are being developed. The relations within the item-networks and the flexibility regarding the criteria allow better detecting students’ level of knowledge and understanding. The
STAR technology provides an individualized feedback delivered via Internet to every registered student. This feedback consists in personalized messages regarding the student’s learning style and level of competence in the tested domain, obtained by correlating the information that is directly gathered from the student with what is already recorded in the item databases.

**Keywords:** collaborative technology, feedback, database of items, multi-criteria analysis

**Retention and Progression of Online Global Students: A Pilot Approach**

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**Abstract:** Higher education institutions are making increasing use of online course delivery as part of their standard offering. E-learning can support the move toward global student bodies and the possibility of more responsive teaching and learning environments. The Open University Business School has offered online distance learning courses for over 10 years and supports thousands of students each year. As student numbers have grown, the capacity to provide truly personalised academic, pastoral and administrative student support is clearly affected. This case study describes a pilot approach to delivering more intelligent and proactive intervention to students registered on an online, open entry, level 3 undergraduate programme. We briefly outline the programme and existing comparative data on known differences between the retention and final achievements of students receiving support solely online compared to those receiving a more traditional blended means of course delivery and tuition support. The study goes on to describe the developing work of the pilot team in setting in place a number of key interventions thought most likely to support the student through their study journey and optimise their chances of completion. The Open University in the UK, like other HE institutions, knows a great deal about its students before they start to study, and, perhaps like others, has not always fully exploited this information. The pilot team is now using profiling data to identify key student characteristics which suggest that additional pre-course contact would be helpful. This may be a discussion of how we might best support the student whilst on course, or may include advice about transferring to another course more suited to their experience or circumstances given the open entry nature of the courses. Systems have been developed and refined which allow the team to track student behaviour once the course has begun, and since the courses within the pilot make heavy use of a Moodle-based Virtual Learning Environment (VLE), there is much that is transparent to us. Each
course has a number of defined milestones which have been agreed to be key or at least facilitative to the students' eventual completion and success. Our systems help us to work closely with course tutors and students to trigger additional contacts from the support team. Other support activities are designed to complement this ongoing work and will be described more fully in the paper. It is crucial that all of the work has the potential for automation and scalability – currently the pilot team is working with over 800 students in around 30 countries. This paper aims to demonstrate that the piloted levels of intervention are both achievable in the long term and cost-effective. Results from the first 2 pilot presentations will be shared alongside results from a comparator cohort.

Keywords: student support, retention, proactive, online, global

Using Language Technologies to Support Individual Formative Feedback

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Abstract: In modern educational environments for group learning it is often challenging for tutors to provide timely individual formative feedback to learners. Taking the case of undergraduate Medicine, we have found that formative feedback is generally provided to learners on an ad-hoc basis, usually at the group, rather than individual, level. Consequently, conceptual issues for individuals often remain undetected until summative assessment. In many subject domains, learners will typically produce written materials to record their study activities. One way for tutors to diagnose conceptual development issues for an individual learner would be to analyse the contents of the learning materials they produce, which would be a significant undertaking. CONSPECT is one of six core web-based services of the Language Technologies for Lifelong Learning (LTfLL) project. This European Union Framework 7-funded project seeks to make use of Language Technologies to provide semi-automated analysis of the large quantities of text generated by learners through the course of their learning. CONSPECT aims to provide formative feedback and monitoring of learners’ conceptual development. It uses a Natural Language Processing method, based on
Latent Semantic Analysis, to compare learner materials to reference models generated from reference or learning materials.

This paper provides a summary of the service development alongside results from validation of Version 1.0 of the service.

**Keywords:** Language technologies, formative feedback, groupwork

**Cultural Awareness in Vocational eLearning**

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**Abstract:** Cultural awareness becomes increasingly important in the work of vocational teachers. One way to develop these skills is to involve teachers in intercultural learning experience in the form of truly multicultural online course. Yet, the design and implementation of such online course is a challenging task as the expectations, attitudes, technical skills and learning cultures of teachers may differ significantly from country to country. This paper describes and discusses the main results of two surveys carried out among eLearning experts and teachers in vocational schools in four countries: Estonia, Germany, Spain and Turkey. Based on the analysis of survey results, the recommendations were formulated to designers of an online course on cultural awareness issues, targeting the vocational school teachers in five different European countries.

**Keywords:** cultural awareness, vocational education

**Designing a Modern Audio and Video Network in Regional Centre’s for Delivery of Vocational Education and Training**

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**Abstract:** Ongoing work for the development of a regional network of vocational education and training centres in Central and Western Romania is reported. The article outlines the impact envisaged, important factors for obtaining sustainability and obtaining a convenient set of decision-making structures. The plan is that the network will utilize high definition video solutions to improve the inter-institutional partnership between existing vocational training centers and a regional university in the central part of Romania. The teaching infrastructure is renovated in order to improve working conditions for providers of vocational education, and improve vocational training quality by making it more adaptable to the Romanian labor
market. This infrastructure will also be used to develop and improve quality assurance training in Romania.

**Keywords:** videoconferencing, video streaming, audio and video, vocational education, Smartboard, digital blackboard

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**Designing and Developing Product Oriented Training Methods in Vocational Education**

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**Abstract:** This paper reports ongoing work for designing, developing and introducing product-oriented training methods within the quality assurance sector in Norway, Hungary and Romania. It extends previous work that has been done in order to use industrial production process Activity Based Training (ABT), into control and verification-based training. In particular the article outlines a new model for how methods and educational material, which have been designed for use in industrial production process, to a large degree may be reused within educational process targeting control and verification within the QA sector. This ensures cost-efficiency with respect to developing and reusing educational material.

**Keywords:** activity based training, product oriented training, quality assurance, vocational education, ISO 3834, control and verification processes

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**Experiences Obtained by Using Open, web-Based Mobile Learning Technology for Smartphone’s in Higher Education**

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**Abstract:** This article outlines ongoing R&D activities in Europe for developing open web-based student response services (SRS), and the forthcoming extension of these SRS into examination processes carried out on mobile devices. The teacher is going to use the SRS as a tool for verification or elaborative feedback immediately after completion of test and exams to single students or groups of students.

**Keywords:** student response services, iPod, iPhone, smartphone’s, vocational training, mobile learning
Mobile Development Portfolio for Smart and Quality Education

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Abstract: Mobile is an emerging medium that comprises the unique attributes of the mobile devices, ecosystem and users. Mobility has always been an integral part of the human condition. The acceleration of globalization associated with technological advances in the early twenty-first centuries has created a new set of parameters for understanding mobility. There is a growing population of workers, from defence force and diplomatic service personnel, business and information technology specialists to educational and health professionals. There is also an increased educational mobility, with initiatives designed to enhance opportunities for learning in multiple countries and an increased student body in international schools around the world. These new manifestations of mobility make it both timely and significant to focus attention on the multidimensional phenomenon of mobile development. Mobile learning implies learner’s mobility, in the sense that learners should be able to engage in educational activities without the constraints of a tightly delimited physical location. The learning actors have begun to consider the adoption of mobile technologies in higher and further education, in schools and the community, and in training and updating. Mobile technologies are having an impact on teaching, learning, and on the connections between formal and informal learning, work and leisure. They are extremely interesting for educators due to the low cost of many of the mobile devices relative to desktop computers and the spontaneous and personal access they give to the vast educational resources of the Internet. When combined with wireless connectivity, learning activities can be monitored and coordinated between locations. However, the task of designing such activities and appropriate learner support is complex and challenging. This paper explores the development settings of a mobile web application, in terms of functionalities, reliability, usability, efficiency, maintainability and portability, based on a mobile knowledge management system that fosters a framework of practice for teachers and students that would like to integrate smart mobile technologies in their course environment. This paper corresponds to the development stage of the researches concluded within the MOBNET-Learning Project, developed in partnership by “Carol I” National Defence University in Bucharest, Advanced Technology Systems in Târgovişte, the Research Institute for Artificial Intelligence of the Romanian

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Academy and two other private companies. This Project elaborates a smart access to content and knowledge in mobile settings. The authors provide insights into how quality aspects can be integrated into the mobile application development and implementation process.

**Keywords:** mobile knowledge management, smart technologies, ISO, mobile SCORM

**Paradigm Shift: From ePortfolios to PLEs**

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**Abstract:** A Personal Learning Environment (PLE) reflects, as a concept, the combination of the set of tools that we use around internet, helping to perceive what we are and what we learn. PLEs are able to bring together all learning experiences acquired in different contexts and mix those experiences in order to reflect ones knowledge. This paper aims at analyzing and exploring the advantages of a PLE, focusing specially on the use of ePortfolios in this context, by considering different approaches and exploring the relationship between the development of an e-portfolio and the students learning styles and multiple intelligences. This focus results from our perception that being aware of the students learning preferences is essential to enhance the quality of the teaching-learning environment, developing different kinds of activities and using different learning tools. In order to understand if and how those concepts (ePortfolios, learning styles and multiple intelligences) are related and to develop some understanding on an approach to correlate them, we have used some assessment tools and applied them in a case study in the area of translation and terminology leaning. The study, briefly described in this paper, has been a well succeeded one. However, we expect to foster further knowledge on the factors that should be changed during the teaching-learning process, by detecting and suggesting improvements. For that we will also reflect on what should be done to achieve better results when using ePortfolios, and consider other tools and approaches to enhance this process, such as social networks

**Keywords:** ePortefolios, learning styles, multiple intelligences, social networks
**Professional Online Education Processes: Sustained Effort and Self-Efficacy**

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**Abstract:** Self-efficacy and instructional support are related to the construction of tacit and explicit professional knowledge. This study analyzes the teaching-learning processes of a graduate Applied Management in Environmental Science course using 61 participants, focusing on self-efficacy and instructional support to construct tacit/explicit professional knowledge. Two noteworthy results have been found. Firstly, it is important to highlight that those fragments of high self-efficacy and low self-efficacy are brief: They are short messages that range from one to four sentences. High self-efficacy and low self-efficacy electronic communications are mainly addressed to other students but not directly to the teacher. All self-efficacy electronic communications referred to course content but not to online learning technology. Thus, to maintain student’ efforts, follow-up and level of satisfaction in order to finish the online course it is necessary that teachers pay close attention to fragments of discourse verbalizing high self-efficacy and low self-efficacy. Secondly, instructional support impacts the type of professional knowledge construct: tacit or explicit. In this sense, it is important that teachers should be aware that a change in which instructional support involves a tacit to explicit demand implies that it may increase low self-efficacy.

**Keywords:** online teaching, learning processes, student-centered, professional knowledge, tacit knowledge, explicit knowledge

**QAOSM- Empowering Quest Atlantis with Open Student Model component**

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**Abstract:** Personalized distance learning, Student Modeling, peer tutoring and students’ collaboration are some of the most critical issues under debate in the Distance Learning literature. New technologies like game based learning, have significant impact on education as ICT boosted instruction and learning beyond the walls of a physical classroom. The use of Student Models (SM) in education (in person or via distance) has been pointed out in literature since early 1980. Student Models have been used in traditional
education as one of the central components of Intelligent Tutoring Systems. The purpose of Student Models is to create a simulation of a virtual tutor or of a peer student, who contributes to more effective educational sessions. According to Barr, "Student Model represents student understanding of the material to be taught with the purpose to make hypotheses about student's misconceptions and suboptimal performance strategies" (Barr et al., 1982).

The Quest Atlantis (QA) project, as described in its web site, has been designing a context for learning, which sits at the intersection of education, entertainment, and social action. It is designed to support social commitment and real-world action. The project is intended to engage children ages 9–16 in a form of transformational play comprising both online and off-line learning activities, with a storyline inspiring a disposition towards social action. This paper will demonstrate the benefits of empowering QA with an Open Student Model component (QAOSM) which is capable of monitoring students’ behavior and learning characteristics in order to outline their learning preferences and their comprehension level.

**Keywords:** student models, distance learning, game based learning

**Metaphors in eLearning**

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**Abstract:** Metaphors are figures of speech in which a word or phrase that denotes a certain object or idea is applied to another word or phrase to imply some similarity between them. Due to their ability to make speaking and writing more lively and interesting, metaphors have always been popular among students. While metaphors provide significant enhancement of contexts and build upon the sense of community, they can limit the boundaries of the communication between students and teachers. In order to carry out student oriented courses, teachers ought to consider the metaphors students use. In an effort to understand and fill in this communication gap, the authors of this paper have initiated a study that aimed to drive out the e-education students’ metaphors in order to suggest a vision for future e-courses. The authors have designed the “E-Education Metaphor Analysis Survey” that comprised 35 items and captured data about e-education students’ metaphors. The questionnaire was posted on Surveymonkey.com and was distributed to e-education students in two countries: Turkey and Cyprus. 352 students filled the questionnaire. The answers revealed that the metaphors students use are influenced by their way of life, their personal
characteristics, their educational background and their feelings. Internet was the most common metaphor used for e-education. A very interesting fact was that 47% of the students considered E-Student to be equivalent to “rich students’ education” and that the term recalled them the metaphor “richness”. Although there were many research studies on common metaphors and their impact on e-education, there were no studies in the literature about eLearning metaphors. This paper presents an innovative approach that focuses on 7 key research questions and represents a first step of a more detailed future project undertaken by the authors.

**Keywords:** eLearning; metaphors; students

### Tool-Based Curricula and Visual Learning

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**Abstract:** In the last twenty years nanotechnology has revolutionized the world of information theory, computers and other important disciplines, such as medicine, where it has contributed significantly in the creation of more sophisticated diagnostic tools. Therefore, it is important for people working in nanotechnology to better understand basic concepts to be more creative and productive. To further foster the progress on Nanotechnology in the USA, the National Science Foundation has created the Network for Computational Nanotechnology (NCN) and the dissemination of all the information from member and non-member participants of the NCN is enabled by the community website www.nanoHUB.org. nanoHUB’s signature services online simulation that enables the operation of sophisticated research and educational simulation engines with a common browser. No software installation or local computing power is needed. The simulations tools as well as nano-concepts are augmented by educational materials, assignments, and tool-based curricula, which are assemblies of tools that help students excel in a particular area. As elaborated later in the text, it is the visual mode of learning that we are exploiting in achieving faster and better results with students that go through simulation tool-based curricula. There are several tool based curricula already developed on the nanoHUB and undergoing further development, out of which five are directly related to nanoelectronics. They are: ABACUS – device simulation module; ACUTE – Computational Electronics module; ANTSY – bending toolkit; and AQME – quantum mechanics module. The methodology behind tool-based curricula is discussed in details. Then, the current status of each module is presented,
including user statistics and student learning indicatives. Particular simulation tool is explored further to demonstrate the ease by which students can grasp information. Representative of Abacus is PN-Junction Lab; representative of AQME is PCPBT tool; and representative of ACUTE is SCHRED, which has 97 citations in research papers and is the most popular tool on nanoHUB.org. Surveys were collected from three courses offered at Arizona State University. These courses were: EEE434/591, the Quantum Mechanics class offered in the fall 2007; EEE 101 Engineering Design, offered in the spring 2008; and EEE533 Semiconductor Device and Process Simulation, offered in the fall 2009. The study consisted of students participating in a voluntary Likert-scale survey that focused on: Learning outcomes, Evidence of the learning, Pedagogical approach and Usability aspects. In particular, the survey investigated how intuitive the tools are. The results of the study identified differences in the way students perceived the nanoHUB.org simulation tools. Graduate and undergraduate students reported more positive experiences with nanoHUB.org simulations than freshman students did. Potential explanations for these differences are: a) freshman students have not fully developed graphical literacy skills; b) students may lack the prior knowledge required at the time they interact with the tool; and c) students may lack interests in the topic and have not yet seen the value of how these tools can be applied toward their own learning goals. A potential support to overcome some of these difficulties may be by embedding just-in-time instructional supports together with the simulation tools.

**Keywords:** nanoHUB, visual learning, tool-based curricula

**About The Nature And The Identity Of Learning Objects**

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**Abstract:** Web 2.0 applications have made large amounts of educational resources available for public sharing and reuse. However various problems emerge as a result of this proliferation of materials, such as their increasingly difficult management. In this context, semantic technologies seem to offer great opportunities for teachers, learners and instructional designers to retrieve and share learning objects (LO). Ontologies and semantic mark-up represent the core of knowledge network on the semantic web. Actually, although the term “ontology” (deriving from philosophy) has become very common in computer science, it was often adopted without perusing the original meaning and the analytical tools that philosophers offer to support ontologically well-founded analysis.
In the recent years, different “semantic educational projects” have been proposed aiming to develop ontology-based LO repositories. These latter represent an interesting framework for supporting learning processes; they are usually based on the development of ontologies aiming at representing the knowledge domain, as well as technical and pedagogical LO features. However, from a literature analysis, LO ontologies appear frequently to be designed more on the basis of the pragmatic convenience of the specific application frame and the developers’ personal intuition than on an ontological analysis. The main disadvantage of this approach is the development of inconsistent models which cannot support logical reasoning processes and cannot be easily reused in a different context from that in which they have been designed. This study takes an approach developed in the “applied ontologies” field, which implies the adoption of an interdisciplinary method aiming at developing well-founded ontologies that can be applied in specific application contexts. More specifically the authors’ proposal is based on DOLCE (Descriptive Ontology for Linguistic and Cognitive Engineering) as theoretical reference framework; it is a foundational ontology, developed at the Laboratory for Applied Ontology (LOA) of the Italian National Research Council (CNR), describing very general conceptual primitives. Therefore this study offers a preliminary analysis about the nature and the identity of learning objects in order to support the formulation of an ontological LO definition, which should be provided before any LO ontology engineering process.

**Keywords:** learning objects, ontologies, semantic web, e-learning
Portuguese
/Spanish
Track
Papers
Correcção Semi-Automática ee Respostas em Texto Livre

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Abstract: A correcção de respostas a perguntas em texto livre, no decorrer de um processo de avaliação, é uma tarefa demorada e sujeita a flutuações na aplicação dos critérios de avaliação, em particular quando o número de respostas é elevado (na ordem das centenas). Em consequência destas flutuações, inerentes à natureza humana e, em grande medida, determinadas por factores emotivos difíceis de mitigar, é natural que possam surgir pequenas discrepâncias nas classificações atribuídas. Este facto leva a que a duas respostas com qualidade semelhante sejam atribuídas classificações diferentes podendo, em casos extremos, gerar-se injustiças nos processos de avaliação. Um conjunto de técnicas ou ferramentas que permitam reduzir o tempo necessário para o processo de avaliação, por um lado, e agrupar as respostas em conjuntos homogéneos, por outro, são as principais motivações para o desenvolvimento do trabalho que aqui apresentamos. Entendemos que é possível homogeneizar a aplicação dos critérios de avaliação na correcção de respostas em texto livre através da aplicação de técnicas de text mining, em particular, de classificação automática de textos, que permitam agrupar as respostas em conjuntos de qualidade homogénea. Desta forma, ao invés de corrigir as respostas por ordem aleatória, o professor poderá corrigir respostas semelhantes sequencialmente. Poderá também optar, por exemplo, por corrigir as respostas por ordem decrescente de qualidade, as melhores primeiro, ou por ordem crescente, começando por corrigir o grupo das piores respostas. As técnicas de aprendizagem activa e de text mining que propomos permitem, ao longo do processo de avaliação, à medida que o professor vai corrigindo perguntas, gerar modelos para organizar automaticamente as respostas ainda não corrigidas nos grupos homogéneos. Estas técnicas contribuirão para reduzir o tempo necessário ao processo de avaliação, para reduzir a ocorrência de erros involuntários de avaliação e para detectar mais facilmente casos de plágio.

Keywords: text mining, aprendizagem activa, correcção assistida
Comunidades de Prática em Ambientes Virtuais: da Teoria à Experiência Colaborativa

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Abstract: A evolução e a expansão das redes de comunicação fomentaram novas formas de aprender e de construir conhecimento, colaborativamente e a distância, fazendo emergir, também, novos cenários de aprendizagem e formação, nomeadamente com o aparecimento de comunidades virtuais, cujos membros se organizam em torno de um tema, interesse ou objectivos comuns. Neste contexto, um grupo de alunos do Programa Doutoral em Multimédia em Educação da Universidade de Aveiro – Portugal, no âmbito da Unidade Curricular (UC) de Educação a Distância, propõe conhecer as tendências das investigações nacionais e internacionais sobre as Comunidades de Prática (CoP) e as Comunidades de Aprendizagem (CoA) em ambiente virtual, no contexto de Educação a Distância. Propõe-se também reflectir sobre a criação, desenvolvimento e experiência vivida pelo grupo de alunos, partindo de um modelo recentemente proposto por investigadores da University of New México (EUA). Realizou-se uma revisão bibliográfica, para compreender o processo de construção de conhecimento no seio destas comunidades virtuais, tendo por base a perspectiva de aprendizagem do construtivismo comunal. Com base no modelo proposto por Gunawardena et al. (2009), reflectiu-se sobre a espiral de aprendizagem de uma comunidade, processo caracterizado pelo (i) contexto, (ii) discurso, (iii) acção, (iv) reflexão, (v) reorganização e (vi) metacognição mediada socialmente. Revisitaram-se, ainda, alguns trabalhos sobre as CoP e as CoA na Educação em Portugal, com o objectivo de identificar os principais resultados da investigação neste país sobre tal temática. Finalmente, sob o modelo proposto por Gunawardena e equipa, analisou-se a experiência de uma CoP, no âmbito de um Programa Doutoral, considerando-se a interacção das ferramentas da Web 2.0 (Facebook, Ning, Wiki, Blog, Google Docs) no desenvolvimento dos diferentes trabalhos das UCs. Em simultâneo, reflectiu-se sobre a forma como a aprendizagem se processou na comunidade à medida que o grupo de alunos explorou e trabalhou com as diferentes ferramentas e se desenvolveu como CoA evoluindo, efectivamente, para uma CoP.

Keywords: ambientes virtuais, comunidades de prática, comunidades de aprendizagem, comunidades virtuais, construtivismo comunal
Novas Tecnologias na U.PORTO: Tendências, Experiências e Desafios
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Abstract: A Universidade do Porto (U.PORTO) tem como um dos seus objectivos estratégicos promover e generalizar a utilização das Tecnologias da Informação e Comunicação (TIC) em todas as suas actividades, bem como incentivar o desenvolvimento e a utilização de serviços inovadores nesta área. Com base neste desígnio de inovação, estabeleceu o uso das novas tecnologias na educação como uma prioridade nas suas estratégias de actuação para os próximos anos. Através da sua Unidade de Novas Tecnologias na Educação (NTE), a U.PORTO iniciou a sua política de sensibilização para o e-learning com um projecto-piloto que pretendia criar condições para, de uma forma sistemática e sustentada, incrementar o desenvolvimento de conteúdos pedagógicos na Universidade, numa perspectiva de blended-learning. O projecto E-learningUP teve por objectivo dinamizar a utilização das TIC, em particular da Internet, no processo de Ensino/Aprendizagem, através da criação de uma componente on-line, de apoio às aulas presenciais. Pretendeu-se que os docentes disponibilizassem conteúdos pedagógicos nas plataformas de e-learning da Universidade, fomentando a utilização de recursos electrónicos na prática pedagógica e assim ampliar o repositório de recursos on-line da Universidade, e avaliar o impacto do e-learning na melhoria da qualidade do ensino. Neste momento, a U.PORTO tem 774 unidades curriculares, de diferentes Unidades Orgânicas, em sua plataforma de e-learning, apoiadas pela unidade de NTE. Esta unidade composta por uma equipa multidisciplinar de 8 elementos, tem como principais actividades o apoio à comunidade académica da U.PORTO no desenho, produção e disponibilização de cursos de e-learning, tanto em regime misto, isto é, presencial e à distância, como totalmente à distância; tem uma oferta alargada de cursos de formação contínua na área das TIC, seja em regime de e-learning ou de b-learning; incentiva e suporta o desenvolvimento de objectos educacionais multimédia como material de apoio ao processo pedagógico (animações; simulações; jogos interactivos; vídeos; grafismos diversos). A unidade dispõe também de um serviço de helpdesk para estudantes no que se refere à plataforma de e-learning e tem vindo a promover um conjunto de oficinas multimédia centradas em temas que lhes são úteis no seu quotidiano académico (boas práticas na utilização de Microsoft Word; tratamento de imagem usando programas open-source (GIMP); criação de páginas web; preparação de vídeo para a web; criação de posters), como forma de os envolver cada vez mais na prática pedagógica. Através da unidade pretende-se equipar os estudantes com as habilidades
necessárias para não só tirar partido da informação e das possibilidades oferecidas pela tecnologia, mas para assumir um papel activo na definição e criação dessas oportunidades - social, educacional, política, cívica e económica. Este é também um dos objectivos de uma Universidade que aposta na qualidade e na inovação das suas metodologias e estratégias de ensino e aprendizagem. Em estreita relação com as necessidades reais e solicitações dos nossos docentes, apresentamos propostas e aceitamos desafios para investir em áreas de inovação como: portefólios digitais, avaliação on-line (e-assessment), gravação de aulas, videoconferência.

Palavras-chave: e-learning; educação; on-line; multimédia; inovação

O Quadro Interactivo Como uma Ferramenta Colaborativa no Contexto do Ensino Português

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Resumo: Com o intuito de potencializar mudanças efectivas nas práticas educativas, o presente trabalho, foi desenvolvido seguindo uma orientação metodológica de Investigação Acção educacional, inserido na área da aplicação dos Quadros Interactivos em contexto de sala de aula, em particular na Área de Projecto do sexto ano do Ensino Básico, tendo como objectivos: a implementação do Quadro Interactivo e o desenvolvimento de actividades colaborativas. Nesta intervenção desenvolveram-se três ciclos de reflexões, definições de problemas, acções, observações e avaliações. Num primeiro ciclo, foram testadas várias estratégias e metodologias para a iniciação ao Quadro Interactivo e aprendizagem colaborativa em grupo/turma; no segundo foram testadas actividades de Aprendizagem Colaborativa em pequenos grupos; num terceiro foram testadas actividades colaborativas em pequenos grupos e interdisciplinaridade. Os resultados deste estudo contribuíram, por um lado, para mudanças ao nível da planificação de aulas com um valor pedagógico acrescido. Por outro lado, comprovaram a possível utilização do Quadro Interactivo em actividades colaborativas.

Palavras-chave: quadros interactivos; aprendizagem colaborativa; colaboração; estratégias de ensino e aprendizagem; educação
Mundos Virtuais Como Ferramentas de Suporte ao Processo Ensino/aprendizagem

Rosa Reis and Paula Escudeiro  

Abstract: A criação de comunidades virtuais on-line tem-se revelado uma área em grande crescimento, em particular na educação. Este crescimento está ligado sem dúvida ao desenvolvimento de plataformas na Web, que permitem implementar mundos completamente virtuais através de dispositivos tecnológicos, mundos onde o utilizador tem a capacidade de estar em qualquer lugar a qualquer momento, sendo possível fazer quase tudo o que se imagina. Para cativar a atenção dos utilizadores, estes mundos devem ser inteligentes e com capacidade de adaptação de forma a não se tornarem enfadonhos como, por exemplo, um jogo simples e repetitivo onde tudo acontece da mesma forma e com a mesma sequência. Com estes mundos tentamos redescobrir os sentidos através do uso da tecnologia; o espaço virtual funciona como uma preparação para o espaço real onde podemos experimentar uma infinidade de sensações. A cada dia, surgem novos mecanismos de socialização e ferramentas de colaboração on-line. Os mundos virtuais têm um papel relevante nesta área pois promovem novos conceitos, novas abordagens e até novas estratégias, que no campo educacional têm vindo a mudar o paradigma de ensino/aprendizagem. Para além destas valências focam também áreas dispersas, tais como marketing, que através dos seus produtos, integram o suporte para comércio electrónico o que tem provocado a criação de mercados de Internet alternativos. Existe ainda outra visão que está direccionada para a utilização de mundos virtuais como ambiente/plataforma de desenvolvimento. O desenvolvimento de aplicações, sobre estas plataformas virtuais 3D requer a existência de um processo sistemático, conduzido por uma série de fases e actividades bem definidas, para nos guiar na construção de aplicações de qualidade. Assim, este artigo tem como objectivo apresentar o trabalho de investigação que se tem vindo a desenvolver nesta área, nomeadamente na avaliação da qualidade de mundos virtuais. Iremos apresentar uma definição de mundo virtual, dar a conhecer diferentes mundos virtuais que vão de encontro à definição apresentada de MV, descrever os problemas ao nível da especificação do design e finalmente esboçar um conjunto de guidelines que ajudem o designer de aplicações educacionais em mundos virtuais a desenvolver aplicações com qualidade.

Palavras Chave: ambientes colaborativos, mundos virtuais, socialização e avaliação de usabilidade
PhD Research
Teachers’ Approaches and Conceptions of ICT in Teaching in Higher Education: Cultural-Historical View

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Abstract: Considerable research has been done on teachers’ conceptions of teaching in higher education in face-to-face settings. Yet, research on teachers’ conceptions of teaching in ICT-enhanced teaching environments in higher education is rare (Gonzalez 2009, 2010). The current study, which is a part of an in-progress PhD project, seeks to build on the few studies found on this topic e.g. Roberts (2003), Gonzalez (2007, 2009, 2010) and further explore teachers’ conceptions of teaching in ICT-enhanced teaching in the context of Saudi Arabian Higher Education. Therefore, this study will examine teachers’ understanding of the role of ICT in teaching to see whether or not their conceptions are consistent with findings of previous studies in other contexts. The study also aims to explore any contextual factors that might affect teachers’ conceptions and therefore their approaches in using ICT in teaching. However, what makes this study different from the previous studies is that it takes a different perspective in dealing with the issue. This will be achieved by examining the issue through the lens of Cultural Historical Activity Theory (CHAT). CHAT is a valuable theoretical framework that can be used to analyse and understand the dynamics of ICT-enhanced learning environments (Engeström and Escalante 1996, Bannon and Kaptelinin 2000). Using qualitative research methods (i.e. observations, interviews and documents’ analysis), this study takes one university in Saudi Arabia as a case study.

Keywords: conceptions, approaches, ICT, higher education, CHAT
Educational Scenario Testing and its Data Mining in the Immersive 3D Virtual Reality Environment

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Abstract: Nowadays there is no doubt in the effectiveness of 3D computer-aided software that is run within the learning process at schools, universities and trainings. Moreover, the 3D concept together with the full immersion of pupils into the learning environment might be the way to increase learner's motivation. That is why the immersive 3D Virtual Reality environment (CAVE-like system) seems to be a very entertaining, interesting and encouraging technology to use in the learning process, thus to increase its educational outcome. The process of developing education scenarios for the above-mentioned environment showed the need of a real teacher. Who is able not only stimulate and help students to use the information and knowledge they already have in the brain, but also to be as close as possible to each other in order to share concrete experiences directly through active learning. In addition, the teacher has to navigate a student through, assess his/her gained knowledge and control the educational process. This research work involves the pedagogical ideas of active learning, as well as the roles of a teacher in the active learning and technical implementation of educational scenarios in the environment. So, technically a human teacher can be physically allocated anywhere and be connected with the environment, where he is presented by an avatar. For current and future student generations an avatar is the familiar way of human presence in the computer games and different digital learning applications. The immersive 3D Virtual Reality environment allows saving the logs of its users, which gives us a great opportunity to create a database to mine the data about learners behaviour in the particular educational scenario. It is considered as an important issue of this work because the analysis of data can be practically used by both teachers and application developers. It is assumed in this research work that the data received from the environment would allow teachers to monitor the process of gaining knowledge by students, the pedagogists would be able to correct the scenario and unify it for different learning subjects, and, as a result, the software developers will bring it to life.

Keywords: eLearning, educational games, immersive learning environment
Contextual Analysis of Remote Experimentation Using the Actor-Network Theory

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Abstract: Distance learning is promoting the adoption of several and new technological resources in education. The Internet is a proof of this trend, providing students with the ability of accessing better pedagogical contents from everywhere at anytime. This is usually supported by the so-called Virtual Learning Environments (VLEs). However, the increase of the bandwidth together with improvements in terms of the devices’ processing capabilities for accessing services/tools through the internet, has contributed to the appearance of the Remote Experimentation (RE) concept. Currently adopted by several Science and Engineering (S&E) courses, RE is classified as a sub-domain of ELearning and as an extension of the traditional VLEs, since it provides all the facilities required for remotely accessing laboratorial experiments, giving both students and teachers the ability to control real experiments by using a simple device (e.g. PC, PDA, smart phone, etc.) connected to the internet. Traditional (in-place) laboratorial experiments can now be remotely controlled with more flexibility, reducing place and time restrictions usually present in a real laboratory. In addition, technological evolution is contributing to many changes in several domains, which has alerted us to the importance of contextualizing RE as a network of interconnected actors, with distinct characteristics and interests. This represents a huge challenge that is fundamental to analyse, since society, and more particularly the educational context, is faced with several unpredictable influences from technological innovations that may contribute to the adoption of various educational solutions some of which may not have been validated, particularly in S&E courses. Hence, this paper focuses on an analysis of RE based on the Actor-Network Theory (ANT) in order to understand the existing relationships between human and non-human (technological and/or conceptual) actors. The paper begins by contextualizing RE as an actor-network in an intersection of several contexts, namely the social, technical and educational. Further on, we map the actors and their associations. An analysis of the inclusion of a new actor into the RE actor-network, namely FPGA-based boards for accommodating Instruments and Modules (I&M), which are usually applied in remote laboratory infrastructures, is dealt with in the final section of this paper.

Keywords: remote experimentation, remote laboratories, weblabs, actor-network theory, technology adoption.
An On-Line Tutor’s Instrument to Visualize the Learner’s Cognitive Activity

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Abstract: In university teaching and learning networked environments, the assessment process often doesn’t take the learner’s cognitive processes into account. The cognitive role of the on-line tutor is often obscure despite the researches done on his/her varied roles. In the work described in this paper, the cognitive role of the on-line tutor is clarified and a specific instrument to help him/her to visualize the learner’s cognitive activity in written reception in French as a Second Language is been created. The research question is that if a qualitative instrument is provided to the on-line tutor in Digital Learning Environments, then will the learner’s cognitive activities be accessible to the on-line tutor. For that, seven varied tasks had been created and studied at the Waystage level of written reception in French as a second Language. These tasks will be available for university students on a Moodle platform. With the study of the seven tasks, twenty-five cognitive abilities with twenty-three in written reception and two in written production (Garletti, to be published) are obtained. With the definitions of these cognitive abilities a name is given to the cognitive processes which could be used by the learner to do an item. We found four hundred and ninety-two items with four hundred and twenty items of written reception and seventy-two items of written production. There are between one and seven manners to name an item. With these items, seven questionnaires were created which will be experimented at university with the students. The aim of these seven questionnaires and their experimented results is to transform the theoretical Digital Typology Modelling of Cognitive Abilities (Garletti, to be published) to a pragmatic Digital Typology Modelling. This pragmatic Digital Typology Modelling will give instructions to the on-line tutor or the lecturer to do digital activities of cognitive remediation.

Keywords: assessment process, digital typology modelling of cognitive abilities, cognitive abilities, on-line tutor perception of the learner’s cognitive processes, teaching and learning networked environment.
Cultural Studies Within Immersive Environments in the Internet: A Methodology Through Avatars

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Abstract: Immersive Environments within the Internet can be considered new social laboratories where not just the users of these communities have innovative and exciting opportunities but researchers too. New possibilities are now opened for researchers that due to the constrictions of real life were not possible before. Academic and commercial research can now be conducted without the limitations imposed by gender, age, distance or physical image, within these new cyber worlds, rapport can now be achieved through the use of avatars, which are the graphic representation of a person within an Immersive Environment (IE). Virtual Communities (VCs) are some of these Immersive Environments where avatars can change as often and as dramatically as their owner wants; they can modify their shape, skin color, height, clothes, gender and even language, and all it takes is the investment of time and occasionally some money. When all these possibilities are accessible, new methodologies have to emerge to take advantage of the flexibility this new media offers to conduct research, and reach places and people in different and easier ways than ever before. This paper proposes a methodology for doing cross-cultural research within one of these VCs in the Internet. Ethnographic research and visual anthropology techniques were applied within the proposed methodology through some cultural cuts, such as religion, work, play, family and sexuality, in three representative cultures within a VC. The main objective was to conduct image studies related to avatars, to assess if and how, the cultural background of the person in real life behind the avatar affects the way its avatar is designed, and if it is determinant in the interaction it has with other avatars within the community. Two avatars were used by the same researcher, sometimes simultaneously, as part of the proposed methodology, one of them keeping a constant, by-default image given by the VC, and the other changing its own image constantly trying to adapt and to blend in every circumstance and studied culture. Finally some of the results and conclusions obtained regarding the use of this methodology, its malleability, and some of the Ethic implications involved in working within these new cyberworlds will be discussed.

Keywords: methodology, avatars, virtual communities, second life, cultural studies, virtual ethnography.
Digital Storytelling Project: Identity and Voice in Higher Education

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Abstract: Competences, technology and storytelling are recognizable concepts to teachers in Higher Education (HE) institutions but how the former engage to promote active, motivated students is a puzzle. Based on this idea, we will present a PhD research project to be implemented in Portugal. The research project will attempt to, through an exploration of students’ autobiographical digital stories, offer suggestions about the integration of Digital Storytelling (DS) as a means to develop life-long competences that engage students’ senses of voice and identity within Higher Education contexts. We are especially interested in how personal digital stories may not simply reflect one’s personal life, but influence interpersonal relationships. In order to further understand the intrinsic relations revolving around the above-mentioned ideas, we propose to begin with a conceptual framework drawn from literature on the Bologna Process and the inherent recent changes in HE institutions in Portugal. We then focus on DS and its role in students’ self-presentation and identity. We are especially interested in how personal digital storytelling does not simply reflect personal life, but has the capacity to comment critically on it as well, thus developing life-long competences and higher-order thinking skills. Furthermore, knowing oneself, as sustained by the literature, has repercussions on socialization. Within HE contexts, we find it essential to explore how the interpersonal relationships established reflect on aspects such as student motivation and engagement. As there are many puzzling questions revolving around DS in HE, this exploratory and descriptive study, within the paradigm of qualitative research, seeks to construct a representation of student identity in a HE setting, based on in-depth and detailed analysis of data gathered from two cohorts of students. Data collection and analysis will draw from case study methodology, discourse and content analysis.

Keywords: digital storytelling, identity, voice, higher education
Methodological Considerations in Developing Online Communication Skills in English Language Courses

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Abstract: The ability to effectively communicate online plays an important role at the present time. It is generally observed that a considerable number of university students in the Czech Republic use online communication tools and feel comfortable keeping in touch with other people by means of computer mediated communication. However, not only these productive skills, but also soft skills, such as the ability to work collaboratively and to communicate in teams, should be developed at the tertiary level of education. This can be done mainly in the courses that focus on communication, including English language courses. The language component of communicative competence comprises not only grammatical and lexical knowledge, but also pragmatic competence, i.e. the ability to appropriately use language forms with particular communication purposes and the ability to interpret such forms correctly. Yet, in many English language courses, the ability to effectively communicate online is not paid much attention to, or is often reduced to language accuracy. Moreover, online textual communication is different from purely written communication, as well as from spoken face-to-face interaction, and these aspects of computer mediated communication should also be reflected in English language courses that prepare students to communicate online. This paper tries to offer certain possibilities to meet the above-mentioned requirements. It presents the results obtained in a pilot study on developing communicative competence in English language courses for university students at the Common European Framework of Reference (CEFR) A2 level. The aim of this paper is to clarify the key principles of developing communicative competence. Along with the theoretical basis, the methodology of designing online communicative tasks and using asynchronous discussion forums are introduced. Important characteristics of online communicative activities are discussed and the process of introducing, maintaining, closing and assessing online communicative activities is presented. Finally, the question whether the online communicative activities can lead to better comprehension as well as better production of the target language is answered on the basis of evaluation of reading and writing test results. Selected students’ progress throughout the course is then evaluated, considering both qualitative and quantitative aspects of student participation in the communicative online activities.

Keywords: communicative competence, computer-mediated communication (CMC), blended learning, discussion forums, English as a Foreign Language (EFL) learning
Work in Progress
Factors that Influence the Adoption of eLearning: An Empirical Study in Kuwait
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Abstract: ELearning has emerged as a powerful and transformative drive to meet learning and training needs and extend their traditional modes. ELearning as an organizational activity started in the developed countries, and as such, the adoption models developed in the developed countries are taken as a benchmark. The barriers to the adoption of eLearning are related to either personal issues, technical issues or organizational issues. As for the personal barriers, the most commonly cited are time management problems, language problems, and attitude towards eLearning. The technical barriers include infrastructure building and upgrading, maintaining connectivity and bandwidth, and lack of technical support. Whereas, the organizational barriers include lack of management support and commitment, lack of strategic planning and direction, and lack of incentives and credibility. Like many other countries, Kuwait has started the adoption of eLearning in the public organizations. A comparison of barriers between the Kuwaiti and developed countries experiences was carried out, and the results showed that there is a difference in the importance and intensity of these barriers between the two practices.

Keywords: eLearning, adoption, factors, models, Kuwait

Teaching Styles Within an eLearning System
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Abstract: The paper deals with teaching styles in an intelligent tutoring environment. In our project Adaptive individualised instruction on e-learning we aim to find a way, how to personalise instruction. We defined several modules of this intelligent tutoring in e-learning system: the learner module, the author module and the module of adaptive algorithms. The author module consists of study materials that are tailored to individual students. To build the author module we need to determine teaching styles as a specific way, how to present knowledge to learners. A bibliographic search on teaching styles brings two terms used most frequently: teacher-centred and student-centred. In the adapted e-course the student-centred approach prevails.
Abstract: Computer games have wide acceptance among younger learners for their challenging design but also for the social interactions they generate (especially web based games). Research showed that games do develop mental abilities and skills such as strategy, mental calculation and decision making but the acquisition of deep knowledge is less well understood. Serious games are specifically designed to change behaviors and impart knowledge and are widely used with adults in training situations, such as emergency preparedness, training for leadership and even citizenship. The use of serious games with a younger audience has been much less explored, though. In this article we present a new game that allows evaluating the use of Serious Games for learning history, culture and social relations. We describe the main concepts of the game, the design of the context and scenarios and anticipate its use with the secondary education students.

Keywords: serious games, games for learning, eLearning

Specific Management Tools for Distance Education (eLearning)

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Abstract: The paper sets out to highlight the need of specific management tools for the eLearning system, especially as changes in the economic and social life are more profound and visible than ever. An outline of the main problems challenging the eLearning system, starting from the definition of the main actors involved in the system with their particularities of age and learning style, further emphasizing the role of the tutor – different from that in a traditional educational system – the paper brings into focus the perspective of the students in Sibiu, Romania, who are integrated into the eLearning system, on tomorrow’s world. The present study is founded on the scenario of three future worlds: the Blue World – of large corporations; the Green World – of ecologists and the Orange World – of quick careers.

Keywords: eLearning, design, future world, specific management tools
Intelligent Tutoring in eLearning System
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Abstract: Both in distance learning and in full-time study forms we can meet many eLearning elements. With support of clever learning management systems (LMS) we are able to offer more than traditional series of instructions, tasks and tests. Adaptive educational environment tailors study course to learner according to his/her characteristics as learning styles, abilities, needs, interests and actual knowledge of subject. Intelligent tutoring system consists of several modules. Our field of research now includes the learner module, the author module and the module of adaptive algorithms. In the paper we describe our conception of “intelligent virtual tutor behaviour”. Virtual tutor has to have sufficiently rich supply of different styles and forms of teaching, partly enough information about styles of learning, kinds of memory and other students’ qualities. We suggest a way of keeping information and its use by virtual tutor as well.

Keywords: personalization of learning, eLearning, learning styles, adaptive algorithm, author module

Participatory Design to Support Students’ Web-based Inquiry of Complex, Socio-Scientific Problems
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Abstract: This poster presents five, multilingual, web-based learning environments (LEs) that have been designed using the learning and teaching platform of STOCHASMOS as part of the CoReflect FP7 project. CoReflect brought together eight diverse and multi-disciplinary teams from six European states and one associated country to collaborate for the iterative design, enactment and research of problem-based innovative inquiry LEs. Using STOCHASMOS, each web-based LE was developed by a Local Working
Group (LWG), which consisted of researchers, designers, scientists, and practicing teachers to address the research-practice gap. Each LE was piloted in authentic classroom conditions at the local level and revised based on design-based research principles. Subsequently, the LWGs translated their LEs to English. This allowed for sharing their LE with a collaborating LWG (cLWG) in another partner country. The LE was then translated in the cLWG local language and enacted in a different cultural context. The LEs focus on socio-scientific issues and target primary and secondary school students. Five out of seven are presented here: “Biotechnology” and “Climate Change” – Cyprus, “Nicotine Addiction” – Israel, “Extraterrestrial Life” – Sweden, and “Fog control” – Greece. They are available in English and in two additional languages each, for widespread use by primary and secondary school educators. Empirical, quantitative and qualitative results on the effectiveness of these five LEs in authentic classrooms are presented.

**Keywords:** participatory design, web-based inquiry, socio-scientific topics, multilingual learning environments, primary-secondary students

**PlayFM – Game Based Learning in Facility Management**

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**Abstract:** Facility Management (FM) is a rather new and very complex management discipline in Europe with a great demand for education and training. It combines elements of technical, economic, service and management skills and fits into modern concepts like the information and services society that are crucial to Europe’s competitiveness. Nowadays FM activities contribute to about 5-10% of the gross domestic product (GDP) of advanced industrialized countries. Within the research project PlayFM the authors accepted the challenge to apply for the first time Game Based Learning (GBL) methods and technologies for know-how transfer in FM. The goal is to develop a Serious Game playFM aiming at various target groups and scenarios. This paper focuses on

- Facility Management – a new key service industry
- Know-how transfer in Facility Management
- Motivation of applying GBL to FM know-how transfer
- The research project PlayFM
- Target groups
- The playFM game scenario
- Mapping FM processes onto game contents (levels of detail)
Evaluating Games Designed to Improve Financial Capability

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Abstract: A multi-level approach to evaluation of serious games for financial capability is presented in this poster. The approach has been implemented as a toolkit in the context of xDelia, a collaborative project on game-based learning with a focus on emotions in financial decision making. The toolkit has been developed as part of a larger design and evaluation framework for the project, targeting four facets of serious games for financial capability: game design, financial capability, behaviour change, and learning with technology. The development of this toolkit is work in progress. An evaluation exercise is planned with existing financial capability games, where we will assess the toolkit and refine its design to make it more effective for evaluators to use.

Keywords: serious games, design and evaluation framework, financial capability, behaviour change, technology-enhanced learning

Towards eLearning 2.0: Case Study of an eLearning Environment

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Abstract: In these days the learning experience is no longer confined within the four walls of a classroom. Computers and primarily the Internet have broadened this horizon by creating a way of delivering education that is known as eLearning. In the meantime, the Internet or, more precisely, the Web is heading towards a new paradigm where the user is no longer just a consumer of information and becomes an active part in the communication. This two-way channel where the user takes the role of the producer of content triggered the appearance of new types of services such as Social Networks, Blogs and Wikis. To seize this second generation of communities
and services, educational vendors are willing to develop eLearning systems focused on the new and emergent users needs. This paper describes the analysis and specification of an eLearning environment at our School (ESEIG) towards this new Web generation, called PEACE – Project for ESEIG Academic Environment. This new model relies on the integration of several services controlled by teachers and students such as social networks, repositories, libraries, e-portfolios and e-conference systems, intelligent tutors, recommendation systems, automatic evaluators, virtual classrooms and 3D avatars.

**Keywords:** eLearning, higher education, learning technologies, collaborative work

**Telkom eLearning: Achieving Wider Implementation Benefits**

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**Abstract:** This paper is a case study of the positive benefits of eLearning implementation as one of ways of learning in PT. Telekomunikasi Indonesia Tbk (Telkom), the largest telecommunication operator in Indonesia with many subsidiaries. Telkom’s business enrichment which has now started to shift from the original field of telecommunications to information services industry, media, and edutainment, that ultimately making the employee’s competency as a prerequisite to remain competitive and win market. TELKOM has had a strong commitment to always maintain and develop the competencies of employees through a variety ways. Classical training is a solution that has taken by TELKOM for long periods. TELKOM Learning Center with its great facilities and all the trimmings, are clear evidence of the company's seriousness in establishing and developing employee competencies. In addition to classical methods, supported by technological developments, since 2007 Telkom has implemented intensive electronic learning methods widely known as eLearning. There are three important benefits that have been achieved by company for implementing eLearning: rapid delivery of training materials, financially cost cutting, and strongly support the standardized creation of training materials, training delivery, and assessment. In terms of delivery of training materials, eLearning have been successfully overcome the shortage of resources that have often occurred, such as the room, time, bureaucratic obstacles, and shortage of instructor. For example, nowadays training to be accomplished by employees in all subsidiaries have been able to run quickly and effectively compared using the classical method of experiencing barriers in terms of resource management. Financially, the implementation of eLearning has reduced the training costs for a year no less
than USD 1 million of the total USD 15 million cost of training in 2009, with number of participants nearly matched the amount of classical training participants. Lastly, eLearning is very supportive to the development process with modular materials, delivery of content by default, does not depend on the style of each instructor, and has an accurate measurement of learning outcomes. There are two challenges that may drive eLearning in Telkom can grow better. First, eLearning can be developed to the level of training that includes simulations, role plays, and training exercise behavior. Second, eLearning must ultimately be able to impact on the achievement of company business. This paper also provides some proposed solutions to overcome those challenges.

**Keywords:** eLearning implementation, competency development, cost cutting, company business

**Social and Affective Interactions in Collaborative E-Learning Projects**

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**Abstract:** One impact of e-learning is the growing emphasis not only on the cognitive but also on the affective (motivation, like or dislike of online experience) and its social aspects (collaboration, communication) as well. Online technology was quick to respond to this growing emphasis as evidenced by the number of social networking tools and web 2.0 technologies, including Google Docs, which are currently used for collaborative e-learning. Using data from Google Docs postings by graduate students in a teacher training course, qualitative analysis was performed to address the following questions: (a) what evidences of social interaction were found in students’ use of Google Docs as a tool for communication and collaboration (b) what evidences of affective interactions were reflected in the Google Docs postings as students worked collaboratively on their technology project. Evidences of social interaction emerged and were categorized as follows: willingness to be a team player, inquiries for clarification or direction, consensus building, and personal comments. These categories reflect the group cohesion that was present among team members, as well as the trust and willingness to share one’s personal information which led to getting to know each other better, and consequently, towards better collaboration. In
terms of affective interactions, patterns that emerged were mostly related to
group motivation (positive feedback or reinforcement, excitement and
optimism), communicating professionally (disagreeing and taking criticisms
politely, acknowledging differences and one’s shortcoming), and there was
plenty of humor. The positive feedback that students gave each other
reflected their perceptions of quality both in their individual work as well as in
the finished product (group project). These results identify the potential of
Google Docs as a tool for online communication and collaboration, in order to
make online experience come close to face-to-face class in terms of social
presence. For future studies, it is recommended that the analysis be
extended to multiple groups or case studies, as well as to a comparison of
social and affective interactions in online and face-to-face settings.

Keywords: e-learning, collaborative online learning, Google Docs, social
interactions, affective interactions, Web 2.0 technology

‘Explain it to me’: Feedback Mechanisms in the School of
Building and Natural Environment, Glasgow Caledonian
University

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Abstract: The aim of this project is to enhance the student learning
experience through the production of innovative feedback practices in the
School of Building and Natural Environment (BNE) in Glasgow Caledonian
University, Scotland. This work in progress aims to disseminate examples of
good practice, by enhancing communication and feedback among staff and
students in the School of BNE. The project will commence in September 2010
and is aligned to GCU’s Teaching and Learning Strategy. The objectives are
to produce a model of good practice on the issues of feedback, initially
directed at selected programmes in the School of BNE. The project team
draws from the strength of interdisciplinary collaboration and involves
teaching staff, members of the University’s Teaching & Learning Caledonian
Academy (the purpose of which is to develop and research innovative forms
of learning and teaching) central support staff and students from the BNE
School. The project will evaluate and build on existing good practice
demonstrated by Vidcasts on the Effective Learning Service website, Peer
Assisted Study Skills’ questionnaires, eliciting students’ thoughts about
feedback, and existing work on the University’s intranet with the aim of
improving and standardising specialised feedback for the School of BNE. The
project team will further explore different mechanisms of giving feedback
including using online feedback by Blackboard and examples of appropriate
academic writing which are discipline specific. An integral aspect will be the involvement of students and BNE staff in the evaluation of the different approaches. We recognise that the feedback should be context based and acknowledge that one size does not fit all. Thus, the feedback mechanisms will need to be inclusive and tailored to different ability levels as well as different cohorts of students. The paper will focus on the rationale for improving feedback mechanisms focusing on specific programmes within the School of BNE.

Keywords: feedback, assessment, vidcasts, student learning, evaluation

Post-Academic Masters in Management of Transfusion Medicine (MMTM); an Evaluation of the eLearning Part of the Course

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Abstract: Health care includes supportive services such as laboratory, radiology and blood transfusion. Blood safety and sustainability of the blood supply is increasingly organized on a WHO advocated nationally supported principle where regional blood procurement centres supply hospitals. To manage such regional or national blood supply centres, leadership development is paramount. Since 2004, WHO has initiated a specific post-academic Masters course focused on management of Transfusion Medicine (MMTM). This MMTM course is largely based on eLearning (distance learning principle). Methods: evaluation of reported experiences of fellows and eLearning providers (teachers) with the eLearning part of MMTM, as applied to developing countries. Results: 17 fellows have entered the eLearning part of the MMTM course coming from African, Asian and Caribbean countries. Most frequently observed problems are of electronic access nature including frequent and unpredictable power supply problems, followed by incompatibility problems between locally used hardware and offered electronic course information. There were limited problems of MMTM module log-in nature. The offered eLearning modules were all well received. Conclusion: local infrastructure needed for a smooth and uninterrupted electronic communication is paramount for a successful eLearning program. The architecture seems to be more important than the contextual module configuration and lay-out to secure a conveniently satisfying eLearning environment.

Keywords: postgraduate masters, eLearning, evaluation
University Electronic Library for Human Resources
Development in Siberia: School Content

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Abstract: Modernization and informatization of education leads to changes in the concept of university electronic library. Today e-library should correspond to the existing trends in education and be the tool of human resources development; e-library today contains regional specific features. It may be used as a tool to oppose demographic decline, complex migrant processes, and the outflow of manpower. The research devoted to the analysis of the trends in human resources development in Krasnoyarsky krai was carried out at the Siberian Federal University in 2009. It included the forecast for the period 2010-2030. Most technological innovations which provide opportunity to retain and develop human resources are being applied within the traditional scheme of in-person interaction, while around 70% of young people, according to sociological research, get information from electronic networks. In this respect the authors of the research pay special attention to the opportunities of electronic libraries. It is a widely-held opinion that the potential of electronic libraries has not been studied sufficiently yet and the understanding of what opportunities electronic libraries may offer is limited. Connecting universities and schools by means of broadband digital data exchange will considerably shorten the time of data transmission for end users - secondary school students, teachers, and parents. Free access to information becomes the most important factor for successful development, sharing innovative experience, scientific cooperation on the regional, national and international level. Working out the social and educational content of the SFU e-library will optimize funding in the social sphere and support most vulnerable categories of people in Krasnoyarsky krai. Developing social services and organizing recruiting agencies within the SFU e-library environment will help attract manpower. Why? The main idea is to use the e-library for human resources development and solving important social problems at Krasnoyarsky krai. A university library becomes not only the scientific but also the social centre. The extended target audience includes university students, teachers, senior classes of secondary schools, parents and other groups of people.

Keywords: e-library, human resources development, educational content, electronic resource, president’s library
Supporting the Reuse of Learning Objects Through the use of IMS LD Templates

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Abstract: The adoption of e-learning has been growing over the years. Also, learning resources have been more shared and made available on Learning Objects Repositories (LOR), with some restrictions on use or not. However, these platforms need to incorporate some features to support learning experiences, which could improve the reuse of the enclosed resources. This paper presents a research project devoted to the semi-automatic creation of XML files that envisages possible forms of using learning objects enclosed in repositories, ready to be used in other platforms. This component is used in a learning objects repository, facilitating the reuse of its resources. We use IMS Learning Design based templates to exemplify how to utilize a learning object, providing one or more scenarios that incorporate the learning object, giving a pragmatic characterization of it. The pre-defined templates were developed considering the 8 Learning Events Model. We describe the steps followed to achieve our goals, as well as all the specifications that have been used.

Keywords: learning design, learning objects repositories

A Blended Learning Course in a High School in México: Students’ Perceptions

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Abstract: A traditional, covering the content approach in schools impose limitations for the implementations of a constructivist scheme so the importance to seek new alternatives to achieve meaningful learning process for young people at school. We want that students, not just learn the ability to independently analyze information, but them should be able to socialize and use it to find solutions in contextualized problematic situations, working individually and in collaborative work for which it must develop skills that allow students to interact with peers. To achieve the above, one such alternative is the application, of Information and Communication Technologies (ICT) in ways that allows a more efficient construction of knowledge and clear student and teacher role. Research was conducted with a Biology third semester high school group of 19 students at Baja California, Mexico. The course last 16
weeks (4 hrs/ week) and a Blended design were used. Elements of the Dimensions of Learning, Knowledge Management and, the Castle Top model were considered. At the core of the design was the identification of Explicit and Implicit Knowledge as a criteria to decide what is going to be taught online and what face-to-face. Moodle was used as the Learning Management System. In the course site, students had 24/7 access to Explicit Knowledge in the form of video clips, Power Point presentations and reading material. In face-to-face sessions, the aim was to bring students to a level of using their knowledge in solving real or theoretical problems. To achieve the above, different strategies, to use information such as interactive games and activities associated with the Dimensions of Learning model were used, to work in groups or individually. Although the results were obtained from three sources, focus groups, logs analysis from the LMS logs, and the work analysis from the face-to-face sessions, in this document we only present the focus group analysis. So, opinions and perceptions from students were obtained by three focus groups conducted at the end of the term, each of them represents the high, medium and low performance students. Through content analysis of the focus groups, we found that the relevant factors in the efficient implementation of this modality are the traditional role assumed by the students, their technology management, and their individual learning strategies. Additionally, a comparative quantitative analysis about the academic achievement contrasting results with students who took the Biology course in a conventional manner (only face-to-face) is in progress. A detailed analysis of the results found in this study will generate important information on potential applications of Blended learning in High School where, in México, there is no documented history on this kind of modality of teaching and learning.

**Keywords:** Blended Learning, High School, TICs, Moodle, México.

**Project Based Teaching, Learning and Assessment Through eLearning**

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**Abstract:** Studying at an Open Distance Learning institution such as the University of South Africa (Unisa) requires students to study through print based materials and a virtual learning environment (VLE), called myUnisa. In an ODL environment there is limited face-to-face contact between facilitators and students. Students cannot regularly go to computer laboratories to gain experience and be assessed during supervised practical sessions as is the case of a traditional contact institution. The module, *Introduction to Interactive*
Programming, is one of the core first year modules in the National Diploma: Information Technology offered at UNISA. The module introduces students to concepts of object orientated programming, teaching them how to write functional programs using JavaScript programming language. Students have to master skills required to gather user specified information, plan and design programs, as well as write and implement coding. Although theory is addressed, the content is of a practical nature and requires implementation. Facilitators often find it difficult to ascertain the most appropriate teaching and assessment strategies for this field of study. Giving telephonic guidance on implementation is difficult as the facilitator cannot ‘see’ where the problem is. Providing individual e-mail guidance to large student numbers on numerous programming problems is time consuming. Therefore, alternative teaching as well as assessment methods is needed. This study investigates the implementation of a Project Based Learning approach via a VLE to achieve the module outcomes. This approach allows students to build their knowledge and expand their experience as they progress. Students deliver an authentic project where acquired competencies can be applied to real life situations. The study also investigates whether the teaching method can be applied to assess the students in the same manner as in which they were taught.

The key questions are:

- How can the available technologies be used more effectively to teach the module ensuring students receive adequate support?
- How can the module be assessed more effectively to ensure the students have reached the specified outcomes of the module?

From the study the value of project-based learning for computer programming has become obvious as it allows for more authentic assessment opportunities. The challenge now is to adapt the lessons learned from this module to similar courses in computing and other disciplines.

**Keywords:** project based learning, open distance learning, assessment
Posters with Abstracts
Learning Characteristics
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Abstract: Learner’s qualities have significant impact on learning process. A complex of those characteristics is called a learning style. There are many references dealing with learning styles, and also there is a range of classification of learning styles. The result of our analysis brings the group of properties usable in e-learning. We define n-tuple of properties. Than we use questionnaires in which learners answer a range of questions. We tested groups of learners studying different study fields. In this paper we present and discuss the results made from their responses. We propose a set of mutually independent learner’s quality which influences the learning process.

Keywords: personalization of learning, learning styles, learning strategies, adaptive algorithm

Criteria and Standards for the Evaluation of eLearning Education in the Field of Romanian Legal Science
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Abstract: This paper sets out to present the criteria and standards by which an eLearning program in the field of Legal Science is evaluated in Romania. Because of the Romanian history, the field of legal education, as we know it today is quite new and has experienced a quick expansion, which has led to the need to evaluate and rank study programs offered by various institutions. After a brief history and state of the art in the field of Legal Science education, it is shown what the evaluation committee should take into account when performing their evaluation and what their tasks are, followed by the unfolding of actual evaluation procedures and the involvement of the students in the evaluation process.

Keywords: eLearning, distance education, law education, evaluation, standards
From Soap Opera to Research Methods Teaching: Developing an Interactive Website/DVD to Teach Research in Health and Social Care

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Abstract: Research methods modules have become a core component of a range of nursing and allied health professional educational programmes both at pre-qualifying, undergraduate level and at post-qualifying and Masters’ level, in keeping with requirements of professional bodies. These courses are offered both on a full time basis and part time for qualified practitioners working in the field accessing continuous professional development (CPD). Evaluation of these courses suggests that some students find research methods challenging to understand and the pace of sessions demanding, and has highlighted a need for additional ways to support learning and teaching. There are a number of existing electronic resources relating to research methods accessible to students via the internet, which could help to support learning and teaching in this area and meet the wide range of learning styles among students. However, many are not specific to health research. In addition, the quality of content can be variable and use/accessibility unpredictable. This, combined with the need for innovative ways to engage interest in research methods, suggested the need for a new electronic resource for health research, for use within the context of a classroom taught course. The process of developing an interactive resource incorporating a narrative element is described. A narrative approach recognises the power of story in capturing interest and transferring information and offers scope for imagination and intrigue within learning. A story of two fictional health practitioner characters working in a local health centre was created to weave around research methods theory. Interactive elements such as question-and-answer tasks, audio extracts, games and interactive graphics were added to offer varied and stimulating ways of presenting material to meet a range of learning styles. The resource also incorporates a number of self-assessment opportunities to reinforce learning. The use of voices heard in realistic scenarios arising in the health centre anchors learning in everyday practice aiming to help students appreciate the need for evidence and the value of research understanding.

Keywords: research methods teaching, evidence-based practice, elearning, nurse education, narrative
Round Table
Technology to Support Teacher Communities in Secondary Schools

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Teachers in secondary education mainly feel responsibility for their own classroom practice, resulting in largely autonomous and isolated work and private learning activities. Most teachers taught separate classes behind closed doors and learned about teaching by teaching, often described as trial and error (Hodkinson and Hodkinson, 2003, 2004). Moreover, teacher professional development has mostly taken place outside school, thus removing teacher learning from the workplace (McMahon, 1999). From the perspective of the development of collective capacity of school, this is not desirable situation. Teachers need to share their teaching practice and learning experiences in order to stimulate a learning culture in schools. In their work on communities of practice and schoolteachers’ workplace learning, Hodkinson and Hodkinson (2003, 2004) conclude that a highly collaborative working culture is accompanied by a learning culture. Teachers learned from one another intuitively, as an ongoing part of their practice. They were happy to move in and out of another's lesson, seeing the work what was going on. There are steadily expanding claims that teacher community contributes to teacher development, the collective capacity of schools, and improvements in the practices of teaching and schooling. We have developed a model with shared definition and indicators of teacher communities in secondary education in the Netherlands (Admiraal and Lockhorst, 2010).

Our model of teacher communities may be used to design as well as to describe and evaluate teacher communities in secondary schools. In line with Grossman, Wineburg and Woolworth. (2001), we are interested in teacher community at the local level, where face-to-face interaction, dialogue and trust are necessary elements of building cohesions. Therefore, inspired by the definition of community by Bellah, Madsen, Sullivan, Swidler, and Tipton (1985), we define a teacher community as: ‘a group of teachers who are socially interdependent, who participate together in discussion and decision making, and share and build knowledge with a group identity, shared domain and goals, and shared interactional repertoire’. This means that we distinguish three core features of a teacher community: group identity, shared domain and goals, and shared interactional repertoire. In line with Wenger (1998) we define these features as:
Mutual engagement that bind teachers together in a social entity (group identity);
A joint enterprise as understood and continually negotiated by its members (shared domain), and Shared practice of and beliefs on how teachers in a group interact (shared interactional repertoire). These features refers to the nature of a community (group identity), what a community is about (shared domain), and how it functions (shared interactional repertoire). For each feature, indicators have been set using the three bodies of empirical research. In this round table session, we will focus on the possibilities of technology to support teacher communities as defined above. The use of technology might solve issues on communication and collaboration of school teachers as well as feelings of cohesion and trust. A focus group procedure will be used to discuss these possibilities of technology, given the ideas on teacher communities in schools and their positive effects. Participants will be asked to provide input on how technology can support these and what should be done face-to-face will be the output.

References
Presentation Only
The Importance of the Mundane.

Anthony Kandler
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The University of Greenwich is one of the United Kingdom’s new Universities having been awarded University status in 1992. It is based on three campuses across South East London and Kent; the main campus is situated in the historic borough of Greenwich within a World heritage site. The University has over 20,000 FTE students from over 100 different countries making for a diverse student body. WebCT’s Virtual Learning Environment (VLE) was chosen as the institution’s centrally supported platform for the development of e-learning in 1999. Since the introduction of WebCT understanding of technology to support learning and teaching has grown substantially within the organisation. This growth was particularly rapid after the implementation of a Portal (Luminus) in 2006 and its integration with WebCT and the University’s Management Information System (MIS), Banner, which enhanced staff and student access to the VLE.

During the academic year 2008 - 9 the University agreed that it would begin a review of the environment it required to support online learning and support of staff and students. This was prompted by the significant role it saw online learning taking within the organisation in the future, the availability of creditable proprietary and open source alternatives and changes proposed by Blackboard the vendors of WebCT. The group tasked with undertaking this review includes representatives from all the Schools which lead teaching and research at Greenwich along with representatives from groups within the Institution responsible for pedagogical, technical, pastoral and administrative support.

One of the important actions of this group has been to act as a forum for the sharing of practice and developments from within Schools. This has highlighted that where Schools have the resources and skills available to them the areas they have focused on are those related to improving course management such as the production of class registers and systems for booking appointments with tutors or improved integration of systems. The importance of course management and enhanced integration with existing systems and with third party tools, for example those that manage coursework submission and plagiarism detection is also clear in the priorities identified for a future VLE and environment to support teaching and learning.

Implicit in the discussions of the group and priorities that have been identified are several of the links proposed in the service-profit chain (Heskett et al.,
The service-profit chain establishes a link between employee productivity, loyalty, satisfaction and customer value and ultimately to customer loyalty and the profitability of private sector organisations. The aspects of the model that this paper will focus on are the internal links in the chain. These view the employees of organisations as internal customers who must first be “satisfied” before they are able to provide valued services to the external customers of the organisation. In order to be satisfied employees need to be provided with the right training, rewards and recognition along with the appropriate support systems. It is clear from the discussion which has taken place during our review and the priorities identified that a VLE is viewed as an important support system. Reliability and an ability to support core delivery which is still primarily face to face and alleviate some of the dissatisfactions encountered with existing learning processes are identified as priorities. From a student perspective their use of technology for “Convenience, Communications, and Control” (Kravik et al 2004), further supports the importance of the course management aspect of VLE’s.

This paper will outline the process that we followed during the VLE review at the University of Greenwich, the priorities we identified including the importance placed on a VLE supporting staff with those tasks often identified as mundane. It will also discuss how the service profit chain model can be adapted to provide a conceptual framework to illustrate the importance of course management and integrative aspects of VLE’s to enhance both the staff and student experience.

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