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Vouliagmeni, Athens, Greece, May 14-16, 2013

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Plenary Lecture 1

Breaking the Boundaries of eLearning Systems through Creativity

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Abstract: There are several previous approaches regarding the relationship between the eLearning systems and the creativity, but from the point of view of eLearning systems that can stimulate the creativity. We want to complete this relationship adding the use of creativity to improve the eLearning systems.
We believe that a bi-univocal relation between the eLearning systems and the creativity could lead to eLearning systems with a significant intelligence level.
Our research started from noticing a resemblance between the robots evolution classified in generations and the eLearning systems evolution classified in versions. Are there enough premises to be able to speak about eLearning systems generations?
The answer will come easily from the comparative analysis between the generations of robot systems development and the versions of eLearning systems.
So, the first generation of robots consists of using fixed sequence programs. The first version of eLearning systems consists of creating, designing, and managing courses, as well as supporting content delivery, user registration, monitoring, and certification. The focus of this version is on content and learning objects, with less consideration for the learning process, communication and collaboration. In conclusion, the first version of eLearning systems consists of a fixed content developed by the instructor and delivered to the learner.
The second generation of robots consists of using programmable controllers that can implement simple adaptive algorithms. The second version of eLearning systems consists of interactive courses. eLearning 2.0 is about creating and sharing information and knowledge with others using social media tools like blogs, wikis, social bookmarking and social networks within an educational or training context to support collaborative approach to learning. In conclusion, the second version of eLearning systems consists of adaptive content to the users' needs.
The third generation of robots consists of smart robots that can decide the best way to accomplish a task based on the general information. The third version of eLearning systems is yet to come. We believe that this third version should consist of smart eLearning systems that learn to know each user and personalize the relationship between the instructor, learner and system, in order to decide the best way to deliver the proper learning environment. Albert Einstein said that "Imagination is more important than knowledge. Knowledge is limited. Imagination encircles the world." The imagination is strongly related to the creativity. So came another wonder "Could creativity play a leading role in the third generation of eLearning systems!?"
Creativity is considered a resource that "waits" to be discovered. In our work, the students have a high creativity potential. Our goal is not only to teach them, but to help them discover things. Professors and students together can create and develop an attractive and useful eContent. Let's imagine the "tomorrow" of the eLearning systems and the future Creative Intelligent eLearning Systems (CIeLS).
Tomorrows is looking today for the perspective of the eLearning systems.
Tomorrow is tickling the creativity and integrating it in the eLearning systems.
Tomorrow is using intelligent tools for the eLearning systems.
Tomorrow is ensuring the quality of the processes integrated in the eLearning systems.
Tomorrow is applying the principles of learner centered teaching in the eLearning systems.
In order to reach this "tomorrow" we know that there already exist a lot of information systems that can be successfully employed in eContent development having a certain degree of adaptability.
Nevertheless, in order to make the big step towards the Creative Intelligent eLearning Systems, we must integrate the creativity tools and methods in all the development phases, starting from the design of the eContent and ending with the evaluation. For example, some simple creativity tools that could be implemented are: automatic writing for keywords identification, course map drawing based on the identified keywords, telling the story of the course based on the map and so on.

It is well known that for any project of new system before the execution phase there must always be a simulation phase. This simulation phase ensures the correctness and viability of the system.
For the technical systems there are many instruments and acknowledged environments that can simulate any system based on its mathematical model.
For the information systems the simulation consists in determining whether the system meets the users' expectations. For this reason we use a software evaluation tool that we have designed and achieved based on Quality Function Deployment (QFD) method. This software tool was applied on an existent modern eLearning system having its own eContent development instruments. There were identified the users' requests (professors and students) and the technical characteristics of the system. The output of the evaluation is an offset representing the degree of requirements accomplishment. We have obtained for the considered eLearning system an offset of approximately 60%. This offset is not at all insignificant, but it can be surely improved by the integration of creativity in the eLearning system.
The simulated evaluation of the Creative Intelligent eLearning System using the QFD based software tool proves that in our opinion the creativity will play a leading role in the third generation of eLearning systems.

Brief Biography of the Speaker: Monica Leba: Received a BSc in System Control and Applied Informatics Engineering in 1998, a MSc in Information Systems and Technologies in 2007 and gained a PhD in System Control in 2002. She joined in 1999 the University of Petrosani. In 2008 became Associated Professor of System Control Engineering. She is member of IFAC (International Federation of Automatic Control), Technical Committee 3.1. Computers for Control. She was Invited Lecturer at the University of Clausthal – Germany, University of Nancy – France and University of Malaga – Spain. She was a Leonardo da Vinci researcher at the Biosensors Department from the University of Florence, Italy. Her general research interests are in applied informatics, algorithms design, modelling and simulation, computer and system control engineering. She took part and coordinated about 20 national and international research projects and grants, three of them having eLearning related theme. She published about 80 papers, part of them in WSEAS conferences. She also presented three plenary lectures in WSEAS conferences in Corfu, Greece, October, 2008, in Istanbul, Turkey, June, 2009 and in Malta, September, 2012. Recently, she participated at the Creativity Workshop in Florence.
Andreea Ionica: Graduated the University of Petrosani as engineer (1992), as economist (2002) and PhD in Industrial Engineering (2004). She got a postgraduate degree in Enterprises' Economy and Administration from Institut National Polytechnique de Lorraine, France (1998). She also graduated the course of Human Resources Management (1999). She is currently Associated Professor in the Management Department at University of Petrosani where she teaches mainly in the areas of Management and Quality Management. Her research interests include: Quality Management Systems (QMS), TQM implementation, the study of customer - supplier relationship in the context of the QMS implementation. She activates in the field of quality management systems, being auditor and Quality Management Representative at the University of Petrosani. In the period 2010-2012 she coordinated a Grundtvig project with partners from Turkey, Romania, Nederland, Belgium and Germany. She participated as coordinator or member in about 10 national and international research projects, two of them having eLearning related theme, and grants and published about 100 papers. She also presented a plenary lecture in WSEAS conference in Malta, September, 2012. Recently, she participated at the Creativity Workshop in Florence.

Plenary Lecture 2

Intelligent Methodologies for e-Learning

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Abstract: In the last years artificial intelligence (AI) approaches have been proposed by the knowledge engineers in the context of educational and e-learning technologies. These approaches offer intelligent methodologies, techniques, and algorithms that can help solving problems in a variety of education/ learning/training domains. In recent years, network-based teaching and learning has become widespread, with bespoke solutions by individual institutions and standardizing initiatives for learning technologies. The variety of AI methodologies enable the design of a robust and new techniques for managing, representing, accumulating, understanding ,discovering ,and updating knowledge in e-Learning knowledge-based systems. This talk presents the following intelligent approaches and methodologies: (a) case-based reasoning, (b) intelligent data mining and knowledge discovery, and (c) ontological engineering . Current research topics and promising application areas are discussed as well.

Brief Biography of the Speaker: Prof. Dr. Abdel-Badeeh M Salem is a Professor of Computer Science since 1989 at Faculty of Computer and Information Sciences , Ain Shams University, Cairo,Egypt. He is a professor emeritus since October 2007 . He was a Director of Scientific Computing Center at Ain Shams University (1984-1990). His research includes intelligent computing, expert systems, biomedical informatics, and intelligent e-learning technologies. He has published around 250 papers in refereed journals and conference proceedings in these areas. He has been involved in more than 300 conferences and workshops as a plenary speaker, member of International Program Committees , workshop/invited session organizer and Session Chair. He is author and co-author of 15 Books in English and Arabic Languages.

He was one of the founders of the following events, First Egyptian Workshop on Expert Systems 1987, Int. Cairo Conference on Artificial Intelligence Applications in 1992 and Int. Conf. on Intelligent Computing and Information Systems 2002, and one of the main sustainers of annual Int. Romanian Internet Learning Workshop Project (RILW), 1997.

In addition he was Secretary of Egyptian Computer Society (1984-1990), Member of National Committee in Informatics – Academy of Scientific Research and Technology (1992-200), Member of Egyptian Committee in the Inter-Governmental Informatics Program, IIP-UNISCO, Paris (1988-1990) and Coordinator of the Annual International Conference for Statistics, Scientific Computing, and Social and Demographic Research (1983-1990). In addition he was a partner of a MEDCAMPUS Projects on Methodologies and Technologies for Distance Education in Mediterranean (1993-1995). In addition He is a Member of the Editorial Board of 15 international and national Journals in the following countries: Canada; Italy, Romania, Japan, Turkey, UK and Egypt. Also, He is member of many Int. Scientific Societies and associations in USA, UK, Switzerland, Austria, Canada and Egypt.

Plenary Lecture 3

Modeling of Knowledge Sharing in Group Work

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Abstract: One of the most important prerequisites in base plan for long-term development of all countries is high education level in society what includes e-learning studies. With the progression of e-learning in society there is exponential growth of e-learning resources or knowledge items on the internet observed. Most of e-learning systems do not take into account individual aspects of person, ignoring the different needs that are specific to existing cognitive profiles. Teachers have been forced to search for possibilities to make e-learning more interesting and effective. Also different cooperation methods come more important in different phases of study process. Knowledge sharing problems originate from the inadequacy of the given information with the recipient's personality characteristics, which determine the type of information perception. Major role in knowledge sharing goes to group work, but the group work efficiency depends not only on the mutual compatibility of the personality types, but also on the suitability of the type to the given task. Combining certain personality types it is possible to both improve and reduce the group work efficiency, that's why the aim of the paper is to develop an imitation model of knowledge sharing, according to the division of group member personality characteristic. To achieve the aim requires to perform a study of the personality characteristics and small groups, their effect on knowledge gaining and group work efficiency, as well as to perform the potential group work efficiency imitation modeling. To improve the knowledge sharing process a recommendation base is created according to the division of type characteristics. The results of the paper can be used to improve the knowledge gaining process, when assembling groups and when forming of different work groups is needed.

Brief Biography of the Speaker: Sarma Cakula graduated with excellence from Latvia University Department of Physics and Mathematics in 1984 and holds Ph.D. in 2002. She started to work in Vidzeme University College (Vidzeme University of Applied Sciences -now) as a teacher. She was a director of Information Technology (IT) professional bachelor program and she is the Dean of Faculty of Engineering of Vidzeme University of Applied Sciences Latvia now. She is a professor of Information Technologies in the Faculty of Engineering. Also she manages some European and Norway fund projects. She is a member of the International E-Learning Association (IELA), the Latvian Information Technology and Telecommunications Association (LIKTA) and Latvian Universities Professor Association (LAPA). She has more than 35 scientific publications from 2006 in field of information technologies and pedagogic, mostly of them in the field of E-Learning. Also she takes part in Scientific Committee of different international conferences and Editorial Advisory on international journals.