

# **2012 IEEE 10th International Conference on Emerging eLearning Technologies and Applications**

## **(ICETA 2012)**

**Stara Lesna, Slovakia  
8 – 9 November 2012**



IEEE Catalog Number: CFP1238M-PRT  
ISBN: 978-1-4673-5120-1

# Table of Contents

<b>Chairmen Welcome</b>	
<b>Committees</b>	
<b>Support Patients through E-Services Solutions .....</b>	<b>15</b>
F. Babič, J. Wagner and G. Tutoky <i>Technical University of Košice, Košice, Slovakia</i>	
<b>Computer as a Tool for Changing Attitudes Towards Mathematics .....</b>	<b>21</b>
K. Bachratá* and H. Bachratý** * Department of InfoComm Networks, University of Žilina, Slovakia, ** Department of Software Technologies, University of Žilina, Slovakia	
<b>Forensic Analysis of Compromised Systems .....</b>	<b>27</b>
A. Baláž, R. Hlinka <i>Department of Computers and Informatics, Technical University of Košice, Košice, Slovakia</i>	
<b>Motivation – Networking - Cooperation The Cisco Networking Academy Program from Hungary .....</b>	<b>31</b>
Peter Beleznay*, Tamás Bertalan**, Ákos Dávid*** *Fast Lane Ltd., Budapest, Hungary, **Observans Ltd, Budapest, Hungary, ***Pannon University, ITC, Veszprém, Hungary	
<b>HP Programs for Education and Innovation Support .....</b>	<b>37</b>
Igor Belousov <i>HP Programs for Education and Innovation Support</i>	
<b>Interactive eBook as a Supporting Tool for Education Process.....</b>	<b>39</b>
M. Biňas, P. Štancel, M. Novák and M. Michalko <i>Technical university of Košice/Department of Computers and Informatics, Košice, Slovakia</i>	
<b>Management of the Quality of Teaching at Universities – a Course for Teachers at the Technical University of Kosice developed within the Operational Programme “Education”.....</b>	<b>45</b>
Michal Blaško, Pavel Raschman <i>Technical University of Košice, Slovakia</i>	
<b>“The School as a base of life” with digital technologies. Without digital technologies “The School without life”.....</b>	<b>49</b>
B. Brestenská <i>Comenius University/The Faculty of Natural Sciences, Bratislava, Slovakia</i>	
<b>Mobile Learning: New forms of education .....</b>	<b>51</b>
P. Campanella <i>Department of Computer Science University of Bari “Aldo Moro”</i>	
<b>Implementation of LogicSim in LMS Moodle.....</b>	<b>57</b>
Martin Magdin, Martin Cápay, and Martin Halmeš <i>Department of Informatics, Faculty of Natural Sciences, Constantine the Philosopher University in Nitra, Slovakia</i>	
<b>Successful model of learning system in a multinational corporation.....</b>	<b>61</b>
Carmen Čapkovič <i>IBM, Global Business Services Learning &amp; Knowledge Centre</i>	

<b>Interaction Support in Presentation System.....</b>	<b>63</b>
P. Čičák, M. Dúčky, K. Jelemenská <i>Institute of Computer Systems and Networks, Faculty of Informatics and Information Technologies; Slovak University of Technology in Bratislava, Slovakia</i>	
<b>Advanced solution for delivering educational multimedia content based on content management system.....</b>	<b>67</b>
D. Cymbalák, F. Jakab and M. Michalko <i>Technical University of Košice, Košice, Slovakia</i>	
<b>Arithmetic-logic unit of multicore chip for image processing .....</b>	<b>73</b>
L. Vokorokos*, E. Danková*, M. Chovanec** * Department of computers and informatics, Technical University, Košice, Slovakia, ** Institute of computer technology, Technical University of Košice, Slovakia	
<b>Building Network Appliances with NanoBSD Operating System on Single Board Computers .....</b>	<b>77</b>
Ivan Dolnák <i>Faculty of Electrical Engineering, University of Žilina, Žilina, Slovak Republic</i>	
<b>Change of Paradigm for Development of Software Support for eLearning.....</b>	<b>81</b>
Matilda Drozdová, Michal Mokryš, Martin Kardoš, Zuzana Kurillová, Jozef Papán <i>University of Žilina, FRI, Žilina, Slovakia</i>	
<b>Modern and interactive education at Pavol Jozef Šafárik University in Košice Activities of the Centre for innovative learning.....</b>	<b>85</b>
E. Durná*, K. Kimaková**, L. Romanová*, J. Sekerák* and D. Šveda *** * PF UPJŠ in Košice/Centre for lifelong learning, Košice, Slovakia, ** PF UPJŠ in Košice/Institute of biology and ecology, Košice, Slovakia, *** PF UPJŠ in Košice/Institute of mathematics, Košice, Slovakia	
<b>Simplistic Concept of Low-Cost Virtual Training Environment Capable of Automatic User Input Data Evaluation/Validation.....</b>	<b>91</b>
M. Ennert, M. Čajkovský, B. Madoš and J. Zeleňák <i>Technical University of Košice, Faculty of Electrical Engineering and Informatics, Košice, Slovakia</i>	
<b>How Information Technology Helps to Mitigate Difficulties Occurred in Teaching Intercultural Groups .....</b>	<b>95</b>
Krisztina Erdélyi <i>Óbuda University/John von Neumann Faculty of Information Technology, Budapest, Hungary</i>	
<b>Tool for Desktop Sharing and Remote Teaching – ForceB .....</b>	<b>99</b>
Martin Prokeš, Radoslav Fasuga <i>Katedra informatiky, Fakulta Elektrotechniky a Informatiky, VŠB Technická Univerzita Ostrava, Ostrava-Poruba</i>	
<b>Virtual laboratory environment based on Dynamips platform.....</b>	<b>105</b>
Peter Fecíľák, Katarína Kleinová <i>Technical University of Košice/Department of Computers and Informatics, Faculty of Electrical Engineering and Informatics, Košice, Slovakia</i>	
<b>Virtual Models of Dynamic Systems: Design, Methodology, Applications, and Experiences in Learning of Mechatronics.....</b>	<b>111</b>
V. Fedák*, T. Balogh**, and Godem A. Ismeal* * Technical University of Košice / Dept. of Electrical Engineering and Mechatronics, Košice, Slovak Republic, ** SIEMENS s.r.o., Industry Sector, Business Unit Metal Technologies, Košice, Slovak Republic	
<b>Possibilities to Solve Some of the Slovak Higher Education Problems Using Information Technologies.....</b>	<b>117</b>
Ján Genčí <i>Department of Computers and Informatics Technical University of Košice</i>	

<b>Discover Learning in Later Life in Europe .....</b>	<b>121</b>
Anna Grabowska <i>PRO-MED sp. z o.o., Gdańsk, Poland</i>	
<b>Blended Learning in Arithmetic Teaching.....</b>	<b>127</b>
P. Híc <i>Trnava University, Faculty of Education, Trnava, Slovak Republic</i>	
<b>Optical Infrastructure for Schools in Slovakia – History of Development.....</b>	<b>131</b>
Pavol Horvath <i>Slovak Academic Network Association</i>	
<b>Software Testing in Introductory Programming Courses.....</b>	<b>133</b>
R. Horváth <i>Faculty of Education of Trnava university in Trnava, Trnava, Slovakia</i>	
<b>The potential implementation of 3D technology in science education .....</b>	<b>135</b>
M. Hostovecký*, J. Štubňa**, J. Stankovský*** <i>*Faculty of Education at Trnava University/Department of Mathematics and Computer Science, Trnava, Slovakia, **Faculty of Natural Sciences at Constantine the Philosopher University/Institute of Gemmology, Nitra, Slovakia</i>	
<b>Development of digital literacy in technical subjects at primary schools.....</b>	<b>139</b>
M. Hostovecký*, J. Štubňa**, <i>*Faculty of Education at Trnava University/Department of Mathematics and Computer Science, Trnava, Slovakia, **Faculty of Natural Sciences at Constantine the Philosopher University/Institute of Gemmology, Nitra, Slovakia</i>	
<b>Dynamic study support with connected external systems .....</b>	<b>143</b>
J. Hrbacek, M. Kucera <i>Masaryk University, Faculty of education/Department of Technical Education and Information Science, Brno, Czech Republic</i>	
<b>Supporting new control paradigm by new technologies.....</b>	<b>149</b>
M. Huba , P. Tapak , P. Bistak <i>URPI FEI, Slovak University of Technology in Bratislava, Slovakia</i>	
<b>The Development of the Slovak System of Higher Education: From 1990 to Foreseeable Future .....</b>	<b>157</b>
J. Hvorecký <i>Vysoká škola manažmentu/City University of Seattle, Bratislava, Slovakia</i>	
<b>Networking Academy - Innovation in Education .....</b>	<b>163</b>
K. Kleinová*, P. Fecíľák*, F. Jakab** <i>* Technical University of Košice / Košice Slovakia, ** Cisco Systems Slovakia / Bratislava, Slovakia</i>	
<b>Enabling Long Distance Education with Realtime Video .....</b>	<b>167</b>
J. Janitor*, P. Fecíľák*, F. Jakab*,** <i>*Computer Networks Laboratory, Technical University of Kosice; **Cisco Systems Slovakia</i>	
<b>Integration of ICT and Unconventional Teaching Approaches into the Digital Systems Design Education towards its Efficiency Enhancement.....</b>	<b>173</b>
Katarína Jelemenská <i>Institute of Computer Systems and Networks, Faculty of Informatics and Information Technologies, Slovak University of Technology in Bratislava, Slovakia</i>	
<b>The On-line Support for Mathematics Teaching based on Hejný Pedagogical Approach ....</b>	<b>179</b>
Dagmar Môťovská*, Peter Borovanský** and Barbora Kamrlová* <i>*Department of Algebra, Geometry and Mathematics Education, ** Department of Applied Informatics, Faculty of Mathematics, Physics and Informatics, Comenius University, Bratislava, Slovakia</i>	

<b>The role of ICT in university – business knowledge transfer.....</b>	<b>183</b>
P. Kess <i>University of Oulu / Department of Industrial Engineering and Management, Oulu, Finland</i>	
<b>Using of video technology for organizing e-learning .....</b>	<b>189</b>
S. S. Khapaeva <i>Sholokhov Moscow State University for the Humanities Institute for Informatization of Education, Moscow, Russia Federation</i>	
<b>Scientific Literacy for the Information Society .....</b>	<b>193</b>
M. Kireš*, D. Šveda** <i>*Institute of Physics, Faculty of Science, University of P.J.Šafárik, Košice, Slovakia, **Institute of Mathematics, Faculty of Science, University of P.J.Šafárik, Košice, Slovakia</i>	
<b>Course web site as an integrated solution for e-learning, collaboration and publicly available knowledge base.....</b>	<b>197</b>
P. Koncz, A. Lukáčová, J. Paralič <i>Technical University of Kosice/Faculty of Electrical Engineering and Informatics/ Department of Cybernetics and Artificial Intelligence, Kosice, Slovakia</i>	
<b>Collaborative Tools for Efficient Instructor Cooperation .....</b>	<b>203</b>
P. Kortiš* and K. Grondžák** <i>* Department of Telecommunications and Multimedia, Faculty of Electrical Engineering, University of Zilina, Zilina, Slovak Republic, ** Department of Informatics, Faculty of Management Science and Informatics, University of Zilina, Zilina, Slovak Republic</i>	
<b>HBB Platform for E-learning Improvement .....</b>	<b>207</b>
Tomas Kovacik, Roman Bronis and Ivan Kotulak <i>Faculty of Informatics and Information Technologies Slovak University of Technology in Bratislava, Bratislava, Slovakia</i>	
<b>Electronic Communications Competence Centre and the Development of Standardization.....</b>	<b>213</b>
C. Francisci*, M. Kováčik**, V. Murín***, and J. Tuška**** <i>* Výskumný ústav spojov /Standardization department, Banská Bystrica, Slovakia, ** Výskumný ústav spojov /Telecommunications equipment department, Banská Bystrica, Slovakia, *** Výskumný ústav spojov /Telecommunications and posts division, Banská Bystrica, Slovakia, **** Výskumný ústav spojov / Telecommunications networks and services department, Banská Bystrica, Slovakia</i>	
<b>The development of study results when implementing e-learning .....</b>	<b>219</b>
K. Kovářová*, M. Navrátilová*, L. Kučírková** <i>* The Czech University of Life of Sciences Prague / Department of Trade and Accounting, Prague, The Czech Republic, ** The Czech University of Life of Sciences Prague / Department of Languages, Prague, The Czech Republic</i>	
<b>eSkills IT Fitness Test 2012 in Slovakia .....</b>	<b>223</b>
Zuzana Kubincová *, Martin Homola*, Pavol Kubinec**, Mário Varga***, Andrea Hrušecka*, Andrej Blaho*, František Jakab****, and Beáta Brestenská***** <i>*Comenius University, Faculty of Mathematics, Physics and Informatics, Bratislava, Slovakia, **The First Independent Secondary Grammar School, Bratislava, Slovakia, ***MICROCOMP - Computersystém s.r.o., Bratislava, Slovakia, **** Cisco Systems Slovakia, Bratislava, Slovakia / Technical University in Košice, Faculty of Electrical Engineering and Informatics, Košice, Slovakia, *****Comenius University, Faculty of Natural Sciences, Slovakia</i>	
<b>Modeling Parallel Web Browsing Behavior for Web-based Educational Systems .....</b>	<b>229</b>
Martin Labaj and Mária Bieliková <i>Slovak University of Technology in Bratislava, Faculty of Informatics and Information Technologies, Bratislava, Slovakia</i>	

<b>Enriching traditional education by evaluation driven tool for mLearning .....</b>	<b>235</b>
J. Lang, P. Palát	
<i>Institute of Informatics and Software Engineering Faculty of Informatics and Information Technologies Slovak University of Technology, Bratislava, Slovakia</i>	
<b>Towards the robotic teleoperation systems in education .....</b>	<b>241</b>
Martin Pala, Daniel Lorencik and Peter Sincak	
<i>Technical University of Košice, Slovakia, Dept. of cybernetics and artificial intelligence</i>	
<b>Application of modern technical tools for sound visualization in the teaching process.....</b>	<b>247</b>
Ervin LUMNITZER, Marcel BEHÚN, Monika BIĽOVÁ, Zuzana FARKAŠOVSKÁ	
<i>Technical University of Košice, Slovak Republic</i>	
<b>ICT in Changes of Learning Theories.....</b>	<b>253</b>
E. Mechlova*, M. Malcik**	
* University of Ostrava/Department of Physics, Ostrava, Czech Republic,	
** University of Ostrava /Department of Pedagogy and, Ostrava, Czech Republic	
<b>Adaptive E-learning – a Tool to Overcome Disadvantages of E-learning .....</b>	<b>263</b>
Zuzana Melicheríková, Alena Bušíková	
<i>School of Management, Bratislava, Slovakia</i>	
<b>Teaching with heart in digispace .....</b>	<b>267</b>
Dušan Meško	
<i>Jessenius School of Medicine, Comenius University, Martin, Slovakia</i>	
<b>Access to CNL Videoserver educational content using mobile device .....</b>	<b>269</b>
M. Michalko, F. Ceperko, D. Cymbalák and M. Biňas	
<i>Computer Networks Laboratory, Technical University of Košice, Slovakia</i>	
<b>School that has a vision .....</b>	<b>275</b>
V. Mitický	
<i>Tatranská akadémia, Poprad</i>	
<b>Student's Progress Tracking on Programming Assignments.....</b>	<b>279</b>
M. Novák, M.Biňas, M. Michalko and F. Jakab	
<i>Department of Computers and Informatics, Technical University of Košice, Slovakia</i>	
<b>Do Not Hesitate to Go Deep: Enhancing the Networking Academy Experience by Being Bold .....</b>	<b>283</b>
P. Palúch, M. Kubina, P. Segeč, J. Uramová	
<i>University of Žilina, Faculty of Management Science and Informatics, Žilina, Slovakia</i>	
<b>Support for Management of Programming Assignments – Automated Grading .....</b>	<b>285</b>
M. Paralič and J. Martončík	
<i>Department of Computers and Informatics, Technical University of Košice, Slovakia</i>	
<b>SLAmeter – the Evaluator of Network Traffic Parameters.....</b>	<b>291</b>
Adrián Pekár, Peter Felic'ak, Miroslav Michalko, Juraj Giertl and Martin Révés	
<i>Technical University of Košice, Faculty of Electrical Engineering and Informatics, Department of Computers and Informatics, Letná 9, 042 00 Košice, Slovak Republic</i>	
<b>Open Education.....</b>	<b>297</b>
K. Pisutova	
<i>Comenius University, Bratislava, Slovakia, ** Empire State College, Saratoga Springs, NY, USA</i>	
<b>Efficiency of Blended Learning in Teaching Logic, Sets and Binary Relations .....</b>	<b>301</b>
M. Pokorný	
<i>Trnava University, Faculty of Education, Trnava, Slovak Republic</i>	
<b>Certified non-academic study with Cisco Learning Partner .....</b>	<b>307</b>
Petra Príbelová	
<i>ALEF Distribution SK, s.r.o./Training center, Bratislava, Slovakia</i>	

<b>E-learning versus face-to-face learning in project oriented education.....</b>	<b>313</b>
K. Pribilová, M. Mišút	
<i>Faculty of Education at Trnava University/Department of Mathematics and Computer Science, Trnava, Slovakia</i>	
<b>Course Content of Computer Security for Nonprofessionals.....</b>	<b>317</b>
I. Pšenáková*, J. Genčí**, T. Szabó*, and H. Telepovská**	
<i>* Constantine the Philosopher University/Institute for Teacher Training, Nitra, Slovakia, ** Technical University of Košice/Faculty of Electrical Engineering and Informatics/ Department of Computers and Informatics, Košice, Slovakia</i>	
<b>Study Program using Cisco Networking Academy Curriculum in Transport and Telecommunication Institute: Analysis of Work Accomplished and New Challenges ....</b>	<b>321</b>
Jelena Revzina	
<i>Transport and Telecommunication Institute/Department of Telecommunications, Riga, Latvia</i>	
<b>Cloud Computing in Education.....</b>	<b>327</b>
Imre J. Rudas	
<i>Óbuda University, Budapest, Hungary</i>	
<b>Will Windows change the shape of the industry and the education, again? How? .....</b>	<b>329</b>
Roman Russev	
<i>Microsoft Slovakia</i>	
<b>Intelligent Methodologies and Technologies for e-Learning.....</b>	<b>331</b>
Abdel-Badeeh M. Salem	
<i>Computer Science Department, Faculty of Computer &amp; Information Sciences Ain Shams University, Abbassia, Cairo, Egypt</i>	
<b>ViRo – the Online Support Tool for IP Network Oriented Courses .....</b>	<b>339</b>
J. Uramová, M. Kubina, P. Segeč, P. Palúch	
<i>University of Zilina, Faculty of Management Science and Informatics, Žilina, Slovakia</i>	
<b>Data Collection and Processing for Mentor Teachers .....</b>	<b>345</b>
Istvan Simonics	
<i>Obuda University Trefort Agoston Centre for Engineering Education, Budapest, Hungary</i>	
<b>Virtual Reality and its Technologies in Education – Our Experiences .....</b>	<b>351</b>
B. Sobota, F. Hrozek, Š. Korečko, P. Ivančák, M. Varga and Z. Dudláková	
<i>Dept. of Computers and Informatics, Faculty of Electrical Engineering and Informatics Technical University of Košice, Košice, Slovakia</i>	
<b>Internet Economy – Unique opportunity for Slovakia.....</b>	<b>357</b>
Ondrej Sočuvka	
<i>Google Slovakia</i>	
<b>From Bologna to Stará Lesná .....</b>	<b>359</b>
M. Šorm	
<i>IS4U, s.r.o., Brno, Czech Republic</i>	
<b>Quo Vadis, e-learning?.....</b>	<b>365</b>
Ľ. Stuchlíková and J. Benkovská	
<i>Slovak University of Technology, Faculty of Electrical Engineering and Information Technology, Institute of Electronics and Photonics, Bratislava, Slovakia</i>	
<b>First outcomes of Designing the future classroom .....</b>	<b>371</b>
V. Blahová*, Ľ. Jakabová*, M. Michalko*, Z. Szalay*, I. Sivý*, F. Jakab**	
<i>*elfa s.r.o., Košice, Slovakia, ** TUKE/Cisco Systems Slovakia</i>	

<b>Implementation the Assessment Rubrics to Evaluate the Outcomes of PBL and ABL Process .....</b>	<b>377</b>
K. Szarka* and B. Brestenská**	
* Stredná priemyselná škola – Ipari Szakközépiskola, Petőfiho 2, 945 01 Komárno, Slovakia,	
** Comenius University, The Faculty of Natural Sciences, Mlynská dolina Ch-2, 842 15 Bratislava, Slovakia	
<b>Improvement of Academic and Research Standards of Higher Engineering Education in Light of Bologna Process.....</b>	<b>381</b>
L. Szentirmai and L. Radács	
<i>University of Miskolc, Department of Electrical and Electronic Engineering, Miskolc, Hungary</i>	
<b>Architecture of Multi-Agent System .....</b>	<b>387</b>
M. Tomášek	
<i>Technical University of Košice, Košice, Slovakia</i>	
<b>An E-Commerce Applications Based on the Multi-Agent System.....</b>	<b>391</b>
M. Tomášek and J. Trelová	
<i>Technical University of Košice, Košice, Slovakia</i>	
<b>Innovative education with e-learning support in European project .....</b>	<b>395</b>
M. Vozár, P. Kuna	
<i>Constantine the Philosopher University/Department of Informatics, Nitra, Slovakia</i>	
<b>Author's Index</b>	