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New Horizons in Web Based Learning

ICWL 2011 International Workshops
KMEL, ELSM, and SPeL
Hong Kong, China, December 8-10, 2011

ICWL 2012 International Workshops
KMEL, SciLearn, and CCSTED
Sinaia, Romania, September 2-4, 2012

Revised Selected Papers
Preface to ICWL 2011/2012 Workshops

The aim of the International Conference on Web-Based Learning (ICWL) series is to provide a leading annual international forum for researchers, professionals, and industrial practitioners to share their knowledge in this rapidly growing area. In 2011, the conference venue returned to Hong Kong, 10 years after its founding, and in 2012, it was held in Romania. This volume comprises papers from one collated symposium and four workshops from 2011 and 2012:

1. The First and Second International Symposium on Knowledge Management and E-Learning (KMEL 2011/2012)
2. The First International Workshop on Enhancing Learning with Social (ELSM 2011)
3. The 4th International Workshop on Social and Personal Computing for Web-Supported Learning (SPeL 2011)
4. International Workshop on Learning Within and from Smart Cities (SciLearn 2012)
5. International Workshop on Creative Collaboration Through Supportive Technologies in Education (CCSTED 2012)

These events were selected from a public call-for-proposals process. The event organizers put tremendous effort into soliciting and selecting research papers with a balance of high quality, novel ideas, and emerging applications. They also followed our recommended vigorous review process. A total of 40 papers from a wide range of countries were accepted.

We are grateful to the ICWL organizers for their generous support. We appreciate the hard work of all event organizers and Program Committee members in putting together the program. We also thank all the authors for their contributions.

Last but not the least, we thank Dr. Jeff Tang for helping us compile this book.

December 2012
Dickson K.W. Chiu
Maggie M.H. Wang
Demetrios Sampson
Costin Badica
ICWL 2011/2012 Workshops Organization

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Fierce competition, globalization, and dynamic economy have forced organizations to search for new ways to improve competitive advantage. In pursuance of this, knowledge is seen as the core resource and learning is viewed as the important process. It is crucial for organizations to enhance the capabilities for effective learning and knowledge management (KM), especially via using information and communication technologies in the digital economy.

The creation, operation, and evolution of such research and practice raise concerns that vary from high-level requirements and policy modeling through to the deployment of specific implementation technologies and paradigms, and involve a wide and ever-growing range of methods, tools, and technologies. They also cover a broad spectrum of vertical domains, industry segments, and even government sectors. We intentionally seek educators, researchers, scientists, engineers, industry people, policy makers, decision makers, and others who have insight, vision, and understanding of the big challenges in knowledge management and e-learning (KM&EL). After review, we selected ten and eight quality papers in KMEL 2011 and 2012, respectively, for presentation covering various aspects of KM&EL.

We appreciate the interest and support of all attendees. In particular, we thank the ICWL organizers, the International Journal of Systems and Service-Oriented Engineering (IJSSOE), and the Knowledge Management & E-Learning: An International Journal (KM&EL) for their generous support. The great success of the symposium is indebted to the hard work of all Program Committee members. We also thank all the authors for their contributions.

December 2012
Dickson K.W. Chiu
Federick Li
Maggie M.H. Wang
First International Workshop on Enhancing Learning with Social Media (ELSM 2011)
Chairs’ Message

The Organizing Committees of the First International Workshop on Enhancing Learning with Social Media (ELSM 2011) welcome you to the proceedings of the workshop. This workshop aims to discuss new contributions as well as practical experiences using emerging information technologies. In particular, it looks at the differences of using and not using social technologies for distance learning technology.

With the popularity of social media (e.g., Facebook, Twitter, Yahoo Answer, etc.), some sort of on-the-fly experience is gained by daily users. This type of experience can, in addition, be recognized as a particular way of cultivating domain knowledge, which can be used for various purposes. This phenomenon, use of social computing and multimedia networking infrastructure, has changed human behavior. The most popular and typical instance is education. The impact of distance learning on traditional universities, in particular, allows educational professionals to rethink how to efficiently and effectively apply up-to-date computing paradigm and technologies to improve instruction as well as to encourage students to learn. The use of social media has recently become an emerging issue to be adopted in distance learning, and various considerations should be carefully identified from both pedagogical and technological perspectives to ensure the successful incorporation of these technologies in distance learning.

The Program Committee accepted five submissions based on the paper quality and the relevancy. These papers are from Japan, China, and Taiwan. Each paper was reviewed by at least three Program Committee members and discussed by the Program Committee co-chairs before acceptance.

We would like to thank the ICWL 2011 Workshop chairs, Dickson Chiu from Dickson Computer Systems and Maggie Wang from The University of Hong Kong, for their support and coordination. We thank all authors for submitting their works to the workshop. We appreciate the Program Committee members for their efforts in reviewing the papers. Finally, we also appreciate the participants’ involvement in the discussions during the workshop.

December 2012

Qun Jin
Timothy K. Shih
Hiroaki Ogata
Chengjiu Yin
Xinyou Zhao
Neil Y. Yen
This workshop followed the previous SPeL 2008, SPeL 2009, and SPeL 2010 workshops, held in conjunction with SAINT 2008 (The 2008 International Symposium on Applications and the Internet), WI/IAT 2009 (The 2009 IEEE/WIC/ACM International Joint Conferences on Web Intelligence and Intelligent Agent Technology), and DEXA 2010 (21st International Conference on Database and Expert Systems Applications). The general topic of the SPeL workshop series is social and personal computing for web-supported learning communities.

Web-based learning is moving from centralized, institution-based systems to a decentralized and informal creation and sharing of knowledge. Social software (e.g., blogs, wikis, podcasts, media-sharing services) is increasingly being used for e-learning purposes, helping to create novel learning experiences and knowledge. In the world of pervasive Internet, learners are also evolving: the so-called digital natives want to be in constant communication with their peers, they expect individualized instruction and a personalized learning environment, which automatically adapts to their individual needs.

The 2011 installment of the workshop dealt with current research on collaboration and personalization issues in Web-supported learning communities, leading to the creation of a truly social and adaptive learning environment. Its aim was to provide a forum for discussing new trends and initiatives in this area, including research about the planning, development, application, and evaluation of intelligent e-learning systems, where people can learn together in a personalized way through social interaction with other learners.

In more detail, SPeL 2011 had as a special theme the provision of intelligent, adaptive support for collaborative learning. In this context, we solicited contributions that converge on this topic, either from the perspective of collaborative learning theory and practice (highlighting opportunities for the introduction of intelligent support in the process), or from the perspective of adaptive learning methods and techniques (traditionally more individual learner-oriented). This was aimed at complementing the workshop’s general themes, and focusing on an emergent research area that is expected to have major impact in the field of e-learning in the coming years.

The workshop was targeted at academic researchers, developers, educationists, and practitioners alike. The proposed field is interdisciplinary and very dynamic, taking into account the recent advent of Web 2.0 and ubiquitous personalization, and it attracted a large audience. Furthermore, this installment’s special theme drew the attention of researchers active in the area of collaborative
e-learning who seek to provide input into, and thus shape the next generation of intelligent and adaptive technologies to support socially-grounded online learning.

After a thorough review process (each paper being reviewed by at least three Program Committee members), four high-quality papers were selected for presentation, covering aspects related to: computer-supported collaborative learning; intelligent agent technology in Web-based education; personalized and adaptive learning; cognitive, motivational, and affective aspects; pervasive e-learning applications.

We would like to take this opportunity to thank all authors who contributed to this workshop, the Program Committee members for their valuable and timely reviews, as well as the ICWL 2011 Workshop Chairs and Organizing Committee for their support and cooperation.

December 2012

Qun Jin
Timothy K. Shih
Hiroaki Ogata
Chengjiu Yin
Xinyou Zhao
Neil Y. Yen
Workshop on Learning Within and from Smart Cities (SciLearn 2012) Chairs’ Message

From the Far East, to the Americas, and to Europe, cities and their surroundings are evolving toward a new dimension in which the information infrastructure becomes an indispensable asset of our life and contributes to the development of info-ecosystems embracing “smart mobility and last-mile logistics,” “smart health,” “smart government,” “smart culture and tourism,” the sustainability of natural resources and green economy. This integrated effort of info-urbanism is expected to produce social innovation and, inevitably, leads one to wonder what forms smart education can take, underlined by all the pieces that make up the mosaic of info-ecosystems. The virtual infrastructure – Web and mobile – will be integrated more closely with the physical landscape – Internet of things and sensiile physical places – incorporating the latter into a complex ecosystem that will bring forward opportunities to learn from everyday life.

Technologies, increasingly embedded into everyday spaces and artifacts, will make the places not only more sensitive but also responsive and, potentially, coevolutionary (TEP, technology-enhanced places) and will give rise to new landscapes in which one can experiment, seamlessly, with the integration of physicality and virtuality.

The person, considered in all her/his complexity, will be placed at the center of educational contexts and scenarios that are increasingly ubiquitous, complex, and organic. The perimeter of the physical space in which the educational experiences develop will become increasingly undefined, liquid, and will host more and more nomadic and informal practices characterized by a high density of social interactions. In these scenarios, the mediating role of technology will widen over time to: foster relationships with the natural environments, filter content needed to support meaningful experiences at a glocal level, disclose feedback necessary to learn how to manage “in action” the complexity of static and dynamic, of learning contexts and processes.

This workshop, the first of its kind, proposed itself as a think tank to foster reflections on how the way we learn may be influenced and change because of the development of “smart cities,” but also “smart villages” and “smart territories.” The selected papers together offer an overview of the issues raised by learning in future smart cities.

The first contribution starts with theoretical considerations intended to foster a reflection of smart city education that should no longer be seen as “infrastructure & service” but rather as a founding process, through which the relationships between persons and the inhabited territories are continuously reshaped; the paper continues, with the description of a strategic and methodological approach that focuses on “museal field” and narrative as key elements of future “learning
from smart cities” and, of course, of advanced integrated technological environments designed to support it.

The second contribution discusses the role played by context in promoting engagement and exploration in situated learning experiences during field trips. In particular, the authors consider field trips where children engage with the physical and social environment in order to learn about cultural and social aspects of the city they live in. By drawing on empirical data collected by means of qualitative methods, they show how learning unfolds along trajectories of experience toward predefined and emerging learning objectives. A reflection on the role played by technology in supporting learning experiences outside the classroom concludes the essay.

The third contribution presents a case history: a virtual museum introducing the interactive VR and MEMS applications related to the learning of chaos and complexity theory. The authors suggest that such a museum can be used in the city in order to create new ways of experiencing science, turning physical activities into virtual ones. In conclusion, a possible road toward pervasive museum for smart cities.

Finally, the fourth contribution offers a completely different perspective and focuses on just-in-time and efficient support to learning for professionals working in the “smart city.” The authors present the principle and structure of a contextual mobile learning system, which uses a search engine to find appropriate learning units in relation with working activities and worker’s profile.

Of course this workshop should be considered only as the first step in a long journey that will develop during the next few decades and that will hopefully lead us to the answers to questions like the following, which are extremely relevant to avoid the transformation of “smart cities” into “automated systems.”

Through which educational path will people become participatory aware citizens of the future SimCities? How will we learn from the open books that are represented by the cities of art? How will data flowing from sensorized areas be elaborated to support awareness and learning? How will our behavior be influenced by knowledge of the co-evolution mechanisms and limits of the ecosystems? Will the educational infrastructure be smart enough to readjust, even autopoietically, to satisfy the needs that everyone could develop life long, in different contexts?

December 2012

Carlo Giovannella

Alke Martens
In the beginning of September 2012, the wonderful Romanian resort of Sinaia hosted the First International Workshop on Creative Collaboration Through Supportive Technologies in Education (CCSTED 2012), organized in the frame of the 11th International Conference on Web-Based Learning (ICWL 2012), a remarkable annual conference that has reached various locations in three continents (Asia, Australia, and Europe).

Nowadays, creative collaboration represents a multidisciplinary process where different problems are explored by taking into account new perspectives, based on the idea of developing and evaluating technology-supported collaborative spaces for different age learners. Collaborative space can be a combination of real and virtual environments that enable group work. Generally, the process of designing a collaborative space involves: scripting collaborative learning (modeling how learners of different ages collaborate in those spaces) and developing technology-enhanced spaces to support creative collaboration.

In this respect, the general topic of the workshop was oriented on how to support creative collaboration through various technologies, at different levels of education: pre-primary, primary, secondary, university, and adult education. The workshop concentrated on current research in computer-supported collaborative learning topics leading toward the realization of a learning environment that can support creative collaboration processes.

Ten papers were selected and presented at the workshop, most of them emphasizing the experience and results obtained in project no. 511733-LLP-1-2010-1-FI-KA3-KA3MP:

CoCreat – Enabling Creative Collaboration Through Supportive Technologies – was co-financed by the European Commission, Education and Training, under LLP Transversal Programme KA3-ICT. The main paper subjects were the illustration and evaluation of collaborative spaces, focusing on the main roles and valences that creative collaboration proposes to various groups of learners. At the end of the workshop, a panel related to “Technology in Support of Collaborative Learning – Challenges and Perspectives” was held, as a conclusion to the discussions held during the presentations.

The number of participants was also impressive: over 50 researchers, specialists, and university teaching staff from 20 countries attended the workshop.
As main organizers of this workshop, the CoCreat team from Valahia University Targoviste would like to thank the participants, the Steering Committee of the CoCreat project, and the ICWL 2012 Conference organizers for their support. It should also be mentioned that the participants expressed their willingness to organize the second edition of the workshop, in 2013.

December 2012

Gabriel Gorghiu
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