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## **IFIP – The International Federation for Information Processing**

IFIP was founded in 1960 under the auspices of UNESCO, following the First World Computer Congress held in Paris the previous year. An umbrella organization for societies working in information processing, IFIP's aim is two-fold: to support information processing within its member countries and to encourage technology transfer to developing nations. As its mission statement clearly states,

IFIP's mission is to be the leading, truly international, apolitical organization which encourages and assists in the development, exploitation and application of information technology for the benefit of all people.

IFIP is a non-profitmaking organization, run almost solely by 2500 volunteers. It operates through a number of technical committees, which organize events and publications. IFIP's events range from an international congress to local seminars, but the most important are:

- The IFIP World Computer Congress, held every second year;
- Open conferences;
- Working conferences.

The flagship event is the IFIP World Computer Congress, at which both invited and contributed papers are presented. Contributed papers are rigorously refereed and the rejection rate is high.

As with the Congress, participation in the open conferences is open to all and papers may be invited or submitted. Again, submitted papers are stringently refereed.

The working conferences are structured differently. They are usually run by a working group and attendance is small and by invitation only. Their purpose is to create an atmosphere conducive to innovation and development. Refereeing is less rigorous and papers are subjected to extensive group discussion.

Publications arising from IFIP events vary. The papers presented at the IFIP World Computer Congress and at open conferences are published as conference proceedings, while the results of the working conferences are often published as collections of selected and edited papers.

Any national society whose primary activity is in information may apply to become a full member of IFIP, although full membership is restricted to one society per country. Full members are entitled to vote at the annual General Assembly. National societies preferring a less committed involvement may apply for associate or corresponding membership. Associate members enjoy the same benefits as full members, but without voting rights. Corresponding members are not represented in IFIP bodies. Affiliated membership is open to non-national societies, and individual and honorary membership schemes are also offered.

Nicholas Reynolds  
Márta Turcsányi-Szabó (Eds.)

# Key Competencies in the Knowledge Society

IFIP TC 3 International Conference, KCKS 2010  
Held as Part of WCC 2010  
Brisbane, Australia, September 20-23, 2010  
Proceedings

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# **IFIP World Computer Congress 2010 (WCC 2010)**

## **Message from the Chairs**

Every two years, the International Federation for Information Processing (IFIP) hosts a major event which showcases the scientific endeavors of its over one hundred technical committees and working groups. On the occasion of IFIP's 50th anniversary, 2010 saw the 21st IFIP World Computer Congress (WCC 2010) take place in Australia for the third time, at the Brisbane Convention and Exhibition Centre, Brisbane, Queensland, September 20–23, 2010.

The congress was hosted by the Australian Computer Society, ACS. It was run as a federation of co-located conferences offered by the different IFIP technical committees, working groups and special interest groups, under the coordination of the International Program Committee.

The event was larger than ever before, consisting of 17 parallel conferences, focusing on topics ranging from artificial intelligence to entertainment computing, human choice and computers, security, networks of the future and theoretical computer science. The conference History of Computing was a valuable contribution to IFIP's 50th anniversary, as it specifically addressed IT developments during those years. The conference e-Health was organized jointly with the International Medical Informatics Association (IMIA), which evolved from IFIP Technical Committee TC-4 "Medical Informatics".

Some of these were established conferences that run at regular intervals, e.g., annually, and some represented new, groundbreaking areas of computing. Each conference had a call for papers, an International Program Committee of experts and a thorough peer reviewing process of full papers. The congress received 642 papers for the 17 conferences, and selected 319 from those, representing an acceptance rate of 49.69% (averaged over all conferences). To support interoperability between events, conferences were grouped into 8 areas: Deliver IT, Govern IT, Learn IT, Play IT, Sustain IT, Treat IT, Trust IT, and Value IT.

This volume is one of 13 volumes associated with the 17 scientific conferences. Each volume covers a specific topic and separately or together they form a valuable record of the state of computing research in the world in 2010. Each volume was prepared for publication in the Springer IFIP Advances in Information and Communication Technology series by the conference's volume editors. The overall Publications Chair for all volumes published for this congress is Mike Hinchey.

For full details of the World Computer Congress, please refer to the webpage at <http://www.ifip.org>.

June 2010                      Augusto Casaca, Portugal, Chair, International Program Committee  
Phillip Nyssen, Australia, Co-chair, International Program Committee  
Nick Tate, Australia, Chair, Organizing Committee  
Mike Hinchey, Ireland, Publications Chair  
Klaus Brunnstein, Germany, General Congress Chair

# Preface

It is fitting that there was a World Computer Congress in the 50<sup>th</sup> anniversary year of IFIP. Within the Learn IT Stream of WCC2010, the conference, Key Competencies in the Knowledge Society (KCKS), brought together some 43 papers from around the world covering many areas of ICT and its role in education.

Of the papers presented here, three were selected as key theme papers for the KCKS conference. These papers' by Adams and Tatnall, Tarragó and Wilson, Diethelm and Dörge, are included in these proceedings. We congratulate these authors for the quality of their work that led to selection.

The range of issues covered within this volume is too broad to set out here but covers, amongst other things, e-examination, Twitter, teacher education, school-based learning, methodological frameworks and human development theories.

It has been an exciting and rewarding task to put these papers together. They represent a coming together of great minds and cutting-edge research. We thank our contributors and our reviewers for producing such an impressive body of work.

Nicholas Reynolds  
Márta Turcsányi-Szabó

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# Table of Contents

Use of ICT to Assist Students with Learning Difficulties: An Actor-Network Analysis . . . . .	1
<i>Tas Adam and Arthur Tatnall</i>	
Use of Graph2Go in M-Learning: A View from the Pedagogical Model . . . . .	12
<i>Silvia Batista, Patricia Behar, and Liliana Passerino</i>	
ICT in Teacher Education: Developing Key Competencies in Face-to-Face and Distance Learning . . . . .	23
<i>Ana A. Carvalho</i>	
Recommendation of Learning Objects Applying Collaborative Filtering and Competencies . . . . .	35
<i>Silvio César Cazella, Eliseo Berni Reategui, and Patrícia Behar</i>	
Teaching Practice from the Perspective of ICT Student Teachers at the Faculty of Education, Charles University in Prague . . . . .	44
<i>Miroslava Černochová</i>	
Intentions to Pursue a Career in Information Systems and Technology: An Empirical Study of South African Students . . . . .	56
<i>Jason F. Cohen and Poonam Parsotam</i>	
From Context to Competencies . . . . .	67
<i>Ira Diethelm and Christina Dörge</i>	
Competencies and Skills: Filling Old Skins with New Wine . . . . .	78
<i>Christina Dörge</i>	
Coping with Complex Real-World Problems: Strategies for Developing the Competency of Transdisciplinary Collaboration . . . . .	90
<i>Gitta Domik and Gerhard Fischer</i>	
Getting Granular on Twitter: Tweets from a Conference and Their Limited Usefulness for Non-participants . . . . .	102
<i>Martin Ebner, Herbert Mühlburger, Sandra Schaffert, Mandy Schiefner, Wolfgang Reinhardt, and Steve Wheeler</i>	
Beyond Pedagogical Content Knowledge: The Importance of TPACK for Informing Preservice Teacher Education in Australia . . . . .	114
<i>Glenn Finger, Romina Jamieson-Proctor, and Peter Albion</i>	
eExaminations Development and Acceptance . . . . .	126
<i>Andrew E. Fluck</i>	



Grundtvig Partnership Case Study 2009-2011 LifeLong Learning for Active Citizenship and Capacity Building LLLab . . . . .	136
<i>Anna Grabowska</i>	
A Theoretical Framework to Foster Digital Literacy: The Case of Digital Learning Resources . . . . .	144
<i>Said Hadjerrowit</i>	
Conditions for Successful Learning of Programming Skills . . . . .	155
<i>Jaana Holvikivi</i>	
Assessment of Knowledge and Competencies in 3D Virtual Worlds: A Proposal . . . . .	165
<i>María Blanca Ibáñez, Raquel M. Crespo, and Carlos Delgado Kloos</i>	
IP3 – Progress towards a Global ICT Profession . . . . .	177
<i>Roger G. Johnson</i>	
A Teacher’s Perspective of Interacting with Long-Term Absent Students through Digital Communications Technologies . . . . .	187
<i>Anthony Jones and Karina Wilkie</i>	
University as an Environment for Shaping Key Teachers’ Competence for Knowledge Society . . . . .	193
<i>Barbara Kedzierska</i>	
Are Wikis and Weblogs an Appropriate Approach to Foster Collaboration, Reflection and Students’ Motivation? . . . . .	200
<i>Mathias Krebs, Christian Schmidt, Michael Henninger, Matthias Ludwig, and Wolfgang Müller</i>	
Digital Literacy: A Vital Competence for 2010? . . . . .	210
<i>Denise Leahy and Dudley Dolan</i>	
Informatics Systems and Modelling – Case Studies of Expert Interviews . . . . .	222
<i>Leopold Lehner, Johannes Magenheim, Wolfgang Nelles, Thomas Rhode, Niclas Schaper, Sigrid Schubert, and Peer Stechert</i>	
In Search of the Affective Subject Interacting in the ROODA Virtual Learning Environment . . . . .	234
<i>Magalí Teresinha Longhi, Patricia Alejandra Behar, and Magda Bercht</i>	
Learning under Uncertainty: A Grounded Theory Study . . . . .	246
<i>Eurico Lopes</i>	

Integration of a Video Annotation Tool into a Coactive Learning and Working Environment .....	257
<i>Johannes Magenheimer, Wolfgang Reinhardt, Alexander Roth, Matthias Moi, and Dieter Engring</i>	
Application of the Multiple Perspectives Model in an Undergraduate Course .....	269
<i>Célio Gonçalo Marques and Ana Amélia A. Carvalho</i>	
Mobile Learning: Using SMS in Educational Contexts .....	281
<i>Adelina Moura and Ana Amélia A. Carvalho</i>	
Making Computer Learning Easier for Older Adults: A Community Study of Tuition Practices .....	292
<i>Michael Nycyk and Margaret Redsell</i>	
The Paradox of More Flexibility in Education: Better Control of Educational Activities as a Prerequisite for More Flexibility .....	301
<i>Henk Plessius and Pascal Ravesteyn</i>	
Design and Implementation of Business Process Management Curriculum: A Case in Dutch Higher Education.....	310
<i>Pascal Ravesteyn and Johan Versendaal</i>	
All I Need to Know about Twitter in Education I Learned in Kindergarten .....	322
<i>Wolfgang Reinhardt, Steve Wheeler, and Martin Ebner</i>	
Technology and Computers in Music and Music Education .....	333
<i>Nicholas Reynolds</i>	
Collaborative Research Training Based on Virtual Spaces .....	344
<i>Darío Rodríguez, Rodolfo Bertone, and Ramón García-Martínez</i>	
The Human Development Process and Informatics Education in the 21st Century .....	354
<i>Toshinori Saito</i>	
More for Less – Live Systems Learning .....	361
<i>Andy Schaer</i>	
ALEF: A Framework for Adaptive Web-Based Learning 2.0 .....	367
<i>Marián Šimko, Michal Barla, and Mária Bielíková</i>	
Design and Development of Virtual Learning Environment Using Open Source Virtual World Technology .....	379
<i>Steven Suman, Ardavan Amíni, Bruce Elson, and Patricia Reynolds</i>	
Educational Management Challenges for the 21 <sup>st</sup> Century.....	389
<i>Ferran Ruiz Tarragó and Ann Elizabeth Wilson</i>	

Supporting Productive Integration of Web 2.0-Mediated Collaboration.....	401
<i>Mun Fie Tsoi</i>	
Evaluating the Cisco Networking Academy Program’s Instructional Model against Bloom’s Taxonomy for the Purpose of Information Security Education for Organizational End-Users.....	412
<i>Johan F. van Niekerk and Kerry-Lynn Thomson</i>	
T’aint What You Do (It’s the Way That You Do It): ICT and Creativity in the Primary School Classroom .....	424
<i>Mary Welsh and Rae Condie</i>	
Need for the Intercultural Awareness in Erasmus Mobility – Administrative Point of View .....	435
<i>Tatjana Welzer, Marjan Družovec, Marko Hölbl, and Mirjam Bonačić</i>	
Home Access: Providing Computers to Families via a National Strategy .....	440
<i>Nicola Yelland, Greg Neal, and Eva Dakich</i>	
Working with Wikis: Collaborative Writing in the 21 <sup>st</sup> Century .....	447
<i>Katina Zammit</i>	
<b>Author Index</b> .....	457