

# Editor's Introduction to the Special Issue Developing Creativity and Broad Mental Outlook in the Information Society

## 1 Introduction

The modern information society has provided numerous new material possibilities for the millions of people. Simultaneously, it has been possible to observe a number of negative shifts in the systems of values of people, in particular, the increase of a gap between the intellectual and spiritual development of many people, the evolution of the systems of values towards commercialized values; such gap and evolution have numerous negative consequences – from underdeveloped ecological consciousness to the failures in the private life. Besides, many national cultures encounter considerable problems in the age of globalization.

With respect to the above said, two basic ideas underlie this Special Issue: (1) many sciences are to join efforts in order to elaborate a common fundamental approach to compensating the mentioned shifts in the systems of values, to supporting and developing the creativity and emotional sphere of the person, (2) Informatics (or Computer Science) has a lot to do in this direction.

## 2 Overview of the Issue

This Special Issue contains eight articles prepared by the authors from three continents (Africa, Europe, North America) and six countries: Botswana, Canada, Italy, The Netherlands, Romania, Russia. Seven articles are based on the papers presented at the Third International Workshop “Developing Creativity and Broad Mental Outlook in the Computer Age – CBMO-2006” in conjunction with the 10th Conference of the International Society for the Study of European Ideas – ISSEI 2006 (University of Malta, July 24 - 29, 2006). The article by Dr. Roger Moore from Canada was kindly recommended by Dr. Linda Turner, a Co-Chair of the Second International Workshop “Developing Creativity and Broad Mental Outlook in the Computer Age – CBMO-2002” in conjunction with the International Conference ISSEI 2002 (The University of Wales, Aberystwyth, UK, July 22 - 27, 2002).

The article *Cognitonics as a New Science and Its Significance for Informatics and Information Society* by Vladimir A. Fomichov and Olga S. Fomichova contains an updated definition of Cognitonics as a new science which, in particular, is studying and looking for the ways of improving cognitive mechanisms of processing information and supporting and developing emotional sphere. The paper outlines a possible structure of Cognitonics and proposes its formal tool - the notation of conceptual-visual dynamic schemes, being an extension of the notation of semantic nets. The optimal preconditions of successful introducing young children to

computers are formulated as a consequence of discovering by the authors of one of the possible ways of achieving in teaching the goals of Cognitonics. Finally, a new, large-scale goal for the software industry is formulated: to construct a new generation of culture-oriented computer programs – the programs destined for supporting and developing creativity, cognitive-emotional sphere, the appreciation of the roots of the national cultures, the awareness of the integrity of the cultural space in the information society, and for developing symbolic information processing and linguistic skills, associative and reasoning abilities of children.

The next two papers describe the structure and applications in education of the programs belonging to a new generation of the culture-oriented computer programs. The paper “ADDIZIONARIO”: a New Tool for Learning between Metacognition and Creativity by Maria Assunta Zanetti, Giovanna Turrini, and Daniela Miazza analyses the experience of using the hypermedia linguistic laboratory *Addizionario* by Italian children for creating conceptual maps, generally recognized as an important means of knowledge acquisition and organization. The content of children's activities was to accumulate and organize the knowledge about Pavia, their native town. The experiment carried out by the authors is described in a broad context of modern psychological theories concerning meaningful learning, emotional learning, intentional learning, development of creativity. The article *AddizionarioPLUS: a Creative Approach to Linguistic and Intercultural Education* by Giovanna Turrini, Paola Baroni and Alessandro Paccosi describes the multimedia system *AddizionarioPLUS*, being an updated, multilingual version of *Addizionario*.

Roger Moore in the paper *Don Quixote 1605-2005: Teaching Don Quixote on WebCT in the 21st Century* describes an experience of developing reasoning abilities and mental outlook of the university students by means of a hybrid course *Don Quixote 1605 – 2005*, based on the E-learning platform WebCT. The analysis of the selected students' comments given in the final part of the article helps to understand the role of studying the classic literature in developing the personality of the student.

The article *Modern Methods for Stimulating Creativity in Education* by P.Chakalisa, D.Mapolelo, E.D.Totev, D.M.Totev contains a short survey of the scientific literature studying the phenomenon of creativity and describes an experience of developing independent thinking and creativity of students with the help of using the programmable logic controllers (or programmable micro-controllers) in the teaching/learning process. Sandro Girolamo Tropiano in the article *New and Old Technologies: a Suitable Combination for Obtaining Efficient Educational Results* shows how the combined use of “old” and “current” technologies for

studying the same physical process helps to grasp the principal regularities of this process and to highlight the development of the scientific thought. It is done on the examples of introducing students to non-linearity and of measuring time.

The paper *How Learner's Proficiency May Be Increased Using Knowledge about Users within an E-Learning Platform* by Dumitru Dan Burdescu and Marian Cristian Mihăescu describes a method of analysing data gathered from an E-learning Web-based platform destined for guiding students in the educational process. The article *Surfing Hypertexts with a Metacognition Tool* by Giuseppe Chiazese, Simona Ottaviano, Gianluca Merlo, Antonella Chifari, Mario Allegra, Luciano Seta, and Giovanni Todaro describes the results of testing the system *Did@browser* destined for supporting the process of constructing knowledge by students during their surfing and learning on the World Wide Web.

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