# Chapter 47
# Trends of Educational Informatics in Latin America

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## ABSTRACT

*Educational Informatics is a multidisciplinary research area that uses Information and Communication Technology (ICT) in education. This article reports a wide overview about the new perspective of educational informatics that has been implemented in Latin America. This general view is the result of the different talks presented during the XIII Conference of Educational Informatics, organized by the Ibero-American Network of Educational Informatics RIBIE (Red Iberoamericana de Informática Educativa) in Colombia. These talks were proposed by international panelists from various parts of Latin America in the lines of ICT for Education and Peace, Thinking and Artificial Intelligence, Emergent Scenarios in Education and Mobiles Technologies and Apps for Entrepreneurship and Learning.*

## INTRODUCTION

Informatics is the science of information that studies the nature of information, its processing, and ways of transformation between information, matter and energy (Wang et al., 2011). Educational Informatics is a multidisciplinary research area that uses Information and Communication Technologies (ICT) in education (Hervatis, Loe, Barman, O'Donoghue, & Zary, 2015). Educational informatics is the integration of processing, conservation and transmission of information through automatic machines in the teaching learning process (Chiappe & Sánchez, 2014; García-Peñalvo & Conde González, 2013; Levy et al., 2003; Sierra-Rodríguez & García-Peñalvo, 2015; Srivastava, 2012). Also, educational informatics involves the development, use, and evaluation of digital systems that use pedagogical knowledge in order to support learning (Caro, Toscano, Hernández, & David, 2009; Levy et al., 2003; Sierra-Rodríguez & García-Peñalvo, 2015). According to (Chiappe & Sánchez, 2014; Srivastava, 2012) educational infor-

matics has two main areas of concern: i) to understand the effects on people of using digital information resources, services, systems, environments and communications media for learning and education; ii) to contribute to the development of practical knowledge of relevance to diverse forms of learning/education using ICT and digital resources.

The Ibero-American Network of Educational Informatics RIBIE (*Red Iberoamericana de Informática Educativa* — www.ribie.net) was created by the VII Subprogram of Electronics and Applied Informatics of CYTED (*Programa Iberoamericano de Cooperación en Ciencia y Tecnológica para el Desarrollo*). RIBIE is formed by institutions and groups that develop and apply ICT for the solution of educational problems through research and technological innovation. RIBIE also promotes communication and collaboration among its members, around the project management, the formulation of policies and the development of strategies for education improvement.

RIBIE has been an important stimulus for the development of educational informatics all over the Ibero-American region. RIBIE has organized scientific activities, courses, workshops, researches and development projects, involving groups from the Ibero-American countries. The International Conference of Educational Informatics is an example of it. This Conference is carried out every two years in a member country of RIBIE.

Colombia organized the XIII Conference of Educational Informatics — International Version in 2017. During this event, the most recent trends of educational informatics in Latin America were presented around the following topics: i) ICT for Education and Peace; ii) Thinking and Artificial Intelligence; iii) Emergent Scenarios in Education; and iv) Mobile Technologies and Apps for Entrepreneurship and Learning.

In the research area "ICT for Education and Peace" the talks were related to the following topics: ICT as a support of peace construction, online government, democracy, participation, digital literacy, empowerment, and teaching- learning processes inside and outside the classroom.

In the topic "Thinking and Artificial Intelligence" different projects and experiences in terms of psychology, philosophy, cognition, neuroscience, neural networks, evolutionary computation, artificial intelligence, linguistics and robotic were presented.

The topic named "Mobile Technologies and Apps for entrepreneurship and Learning" involved topics related to new proposals in order to promote self-learning, entrepreneurship and innovation using mobile technologies.

By last, in "Emerging Scenarios in Education" projects and experiences connected with the most recent technologies to enrich the learning processes in multiple scenarios at social, business, cultural and educational levels were tackled.

The main objective of this paper is to present an overview about innovative trends in educational informatics, taking into account the 73 talks performed in the event mentioned above. This paper is a summary about the talks developed showing the research areas proposed through the following chapters; Chapter II shows briefly the researches and experiences in the topic called ICT for Education and Peace. Chapter III describes the studies framed in the Thinking and Artificial Intelligence area. Chapter IV tackles the different emerging scenarios that are being used in Latin America education. Chapter V takes into account the wire range of mobile technologies and Apps for entrepreneurship and learning. Finally, Chapter VI presents a set of conclusions and a proposal about future works in this area of knowledge.

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