



## EDITORS' NOTE

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## 1 Introduction

The UNESCO-UNIR ICT & Education Latam Congress was born with the drive of “*Integration of formal and informal contexts, for a better learning and a better teaching*”. Its main focus combines any learning that takes place outside the classroom with the official academic programs.

The congress work on three tracks: 1) Technology & Learning, 2) Educational Methodology, and 3) Educational Policy & Digital Society. A wide range of issues to discuss about, from the analytics applied to learning, cyber security, integration of Open Educational Resources in academic programs, educational innovation or Digital Anthropology.

These proceedings contain a selection of papers presented, in which authors explain their advances in the research areas of the congress. A brief of every contribution is shown in each section of this introduction, according every track described above.

## 2 Track 1: Technology & Learning

The first track of the congress included related papers about technology and learning. Authors talk about visual analytics, learning management systems & ubiquity, eLearning standards, specifications, interoperability and systems integration, among others. In next paragraphs, readers may get an overview of presented works.

Rojas, A. F. et al., in the paper Distributed processing using cosine similarity for mapping Big Data in Hadoop presents the results in implementing cosine similarity for mapping big data in a flat database. For this purpose, the information from movie ratings will be used, so it will result in a recommendation of a movie highly related to another. If the information used for testing is considered real, these results could be useful for the development of a recommendation system for products and services from an organization which has as well the records of their customers’ ratings.

Suing A., et al., in Redesign bachelor's degree in communication. Case study Distance Modality - UTPL in Ecuador shows the redesign of the career of Social Communication for distance learning students made by a team of teachers and researchers in the Department of Communication Sciences of the Universidad Técnica Particular de Loja conducted to attend the provisions of the Organic Law of Communication in Ecuador, which states that all university careers will be redesigned in function of relevance to the needs of their geographical areas, international trends of knowledge and will contribute to achieve the objectives of the National Development Plan of Good Living from 2015 to May 2016

Merchán, S. et al., as part of the initiative to integrate the Significant Learning proposal by Dr. L. Dee Fink into the teaching strategy of the Universidad El Bosque in Bogotá, presents the paper Towards an Integration of B-learning and Significant Learning: A Case study at the Universidad El Bosque with a qualitative research in the form of a case study that is conducted in b-learning courses of the Systems Engineering program in order to assess successes and improvement opportunities for this learning modality.

Merchán, S. and Duarte García, J., present and analyze the experience of applying certain data mining methods and techniques on 932 Systems Engineering students’ data, from El Bosque University in Bogotá, Colombia; effort which has been pursued in order to construct a predictive model for students’ academic



performance. The experience is analyzed according to the results obtained in each of the process' iterations. At the end of the work some recommendations and thoughts are laid out for the future development of this work, and for other researchers working on similar studies. This work is called Analysis of Data Mining Techniques for Constructing a Predictive Model for Academic Performance.

Castillo, J. et al., in the paper Virtual forums as a learning method in Industrial Engineering Organization describe the experiences of educational improvement and innovation carried out in a multi-cultural environment with students of different nationalities of the Engineering School along 5 years. The objective is to change the classic face-to-face educational model of Industrial Engineering School to a new paradigm based on collaboration. They focus on the essential problems and peculiarities of the implementation of this particular e-learning educational system in Industrial Organization Engineering.

Simanca H., F. A. and Abuchar Porras, A., propose a development based on platform Moodle to generate statistic graphics about the student's interaction with activities and resources of the course. Graphics are generated for access and presence, use of resources, activities and participation, established communication, traceability in the platform and interaction among people. Using the LA tool developed, educational processes can be improved because it shows academic progress of students and enables teachers to characterize and monitor students and see in detail their behavior in the virtual classroom. The paper is called Application of a Learning Analytics tools to a Moodle virtual classroom.

### 3 Track 2: Educational Methodology

The second track of this education congress presents papers about methodologies in education. Authors discuss about integration of informal & formal learning, Open Educational Resources and MOOCs, learning strategies and self-guidance, adaptive and personalized learning, for individuals and groups, and teaching methodologies and lesson plans. Following is a brief summary of each work for readers.

Espírito Santo, E., et al., present in the paper Open Educational Resources: initiatives towards culture implementation at a public university a Brazilian public university experience in Open Educational Resources – OER development. They discusse the OER concept in a contemporary approach, i.e., as open to anyone, under an open license that permits no-cost access and free reuse, continuous improvement and repurposing for educational purposes. They present the results reached at the researched university with open education in MOOC's format and the development of open mobile application for physics education (M-Labs) and another for the blind and visually impaired.

Melgarejo, V. E., and Rodríguez H., A. A., taking global Frameworks of ICT4E for developing M&E they expose in Integral schema for Monitoring and Evaluation of ICT Inclusion, Use and Appropriation in Education a design of an integral M&E schema of Inclusion, Use and Appropriation of ICT4E in institutions at Tunja, Colombia. They reached the conclusions that Public Educational Institutions at the city of Tunja are in the second stage of evolution and these always must be line up with national policies and goals.

Llamas-Salgero, F., et al., talk about a Study of the attitude of students towards new technological contexts and neuroscience progress. Technology and Neuroscience have formed a strong collaboration to improve education. They analyse the student's attitudes towards the use of new technologies in the primary school classroom. They designed a questionnaire and gave it to 1.770 students aged between 1–12 years from 50 CEIP (Infant and Primary schools). In general, the results show that whilst students between 11-12 years do not show a rejection of the use of ITC, a low percentage of these demonstrate that they would prefer to use them in a group.

Palacios Osma, J. I., et al. in the paper called Learning platform assessment model LMS, make a proposal to establish a quantitative evaluation system that assesses attributes of LMS platforms, according to institutional requirements. Use and appropriation of a LMS by higher education institutions require a decision that should go beyond economic aspects, especially when there is a mimetic institutionalism in most platforms, which offer similar educational, communication, interaction and management services and tools.

Thomas, J. R., et al., preset a research to know the relationship between knowledge, participation and creativity at an American learning center. The instrument used to evaluate creativity is the test CREA and used



to evaluate the participation and knowledge of the students is the Plickers application. The results indicate that creativity is relating to the participation, and this knowledge. Therefore, due to the relationship between the variables, teaching must include factors such as creativity and interaction for more meaningful learning. The contribution is called Participation and knowledge through Plickers in high school students and its relationship to creativity.

#### **4 Track 3: Educational Policy & Digital Society**

The third and last track of this congress exposes papers about educational policy and digital society. Authors writes about digital learning and ethics, education in Administration and policies, content, self-created content, collaborative content, Cybersecurity, eLearning privacy and overall rights to content, media and research. In the following text, readers can get a sample of articles related to this topic.

Sanchez Rubio, M. and López Civera, G., in Automatic generation of virtual machine for security training explores the applicability of configuration management tools to the design and development of practical content challenges in the field of cybersecurity. Using the tools Puppet and Packer, a series of templates have been developed to create a test scenario. Such scenario has been proposed to contain both vulnerable services and already implemented security measures. Based on this scenario, flexibility of the solution and time saving achieved have been assessed. Through this assessment, it has been determined that the use of these tools is a viable option in developing both small scale scenarios focused on teaching and big scenarios used in cybersecurity events.

Tod Colegrave, P. presents a work called Makerspaces in Libraries: Technology as Catalyst for Better Learning, Better Teaching in which he talks about the product of leveraging technology as catalyst for active learning and engagement within and beyond the physical commons of the library, a blending of formal and informal learning, accented by increased innovation and entrepreneurship across disciplinary and organizational boundaries.

Senderek, R., writes the paper called The systematic integration of technology enhanced learning for lifelong competence development in a corporate context. This paper gives an overview of the nowadays relevant learning enhancing technologies. In addition to this, it suggests a roadmap to integrate technology enhanced learning into the corporate context as well as the existing competence development.

Ramírez Isaza, E., in the work called Contributions of the Analysis Model as a systematization of the Research Project REDCO Red de Conocimiento: CIER Occidente, gives an overview of the research work that Research Education and Virtuality Line of GITT Group (Research Group of Terminology and Translation) of University of Antioquia (Colombia), in alliance with Faculty of Education of the same university, conducted from 2014 to 2016, as one of the five universities that participated in the Project CIER Occidente of MEN (Ministry of Education) and Colciencias, through the Macro Project: REDCO Red de Conocimiento (Knowledge Network).

Gaona-García, P. et al., present a proposal for a navigation system in virtual-reality based on Knowledge Organization System (KOS) in a zoo. The main goal is to analyze the association of concepts in a 3D navigation structure, and basic usability aspects through the use of mobile devices on a population of children aged 10 to 12 years. The rest information in found in Navigation and Visualization of Knowledge Organization Systems using Virtual Reality Glasses: first insights.