

**Session 232 11:45 - 13:15 B2 Invited Symposium 691**

**Chair:** César Coll, Facultad de Psicología, Spain

**IS. 5. ICT based learning: from technopedagogical design to practices of use**

**Para citar esta obra:**

García, B; Bustos, A.; Espíndola, S, Miranda, A y Márquez L.. (2005). The analysis of patterns of interaction and knowledge construction in on-line learning environments: a methodological proposal. Invited Symposium 691. First ISCAR Congress International Society for Cultural and Activity Research. Acting in changing worlds: Learning, communication, and minds in intercultural activities Abstracts. pp. 691-694 September, 20-24, 2005 Sevilla, Spain

**First ISCAR Congress  
International Society for Cultural  
and Activity Research  
Acting in changing worlds:  
Learning, communication,  
and minds in intercultural activities  
Abstracts**

September, 20-24, 2005

Sevilla, Spain

II

Cover Layout and Composition: María Sabater

Data Base: Seth Chaiklin

David Alarcón Rubio

José A. Sánchez Medina

Print:

© 2005 David Alarcón Rubio, Alejandro Barragán Felipe, Miguel J. Bascón Díaz, M<sup>a</sup> Jesús Cala Carrillo, Mercedes Cubero Pérez, Rosario Cubero Pérez, Josué García Amián, Beatriz Macías Gómez-Stern, M<sup>a</sup> José Marco Macarro, Virginia Martínez Lozano, Manuel L. de la Mata Benítez, M<sup>a</sup> del Mar Prados Gallardo, Juan Daniel Ramírez Garrido, José A. Sánchez Medina, Andrés Santamaría Santigosa

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, without the permission.

ISBN:

**Session 232 11:45 - 13:15 B2 Invited Symposium 691**

**Chair:** César Coll, Facultad de Psicología, Spain

**IS. 5. ICT based learning: from technopedagogical design to practices of use**

**September 23, 2005 Friday**

**Session 232 11:45 - 13:15 B2**

**Chair:** César Coll, Facultad de Psicología, Spain

**IS. 5. ICT based learning: from technopedagogical design to practices of use**

**Introduction. César Coll**

The incorporation of the information and communication technologies (ICT) to the formal teaching and learning processes is rapidly increasing. Understanding the transformations that ICT may provoke in our educational practices is, therefore, one of the basic challenges of the educational research nowadays.

A great part of the current research proposals concerning the relations between ICT and the teaching and learning processes present, however, important limitations. One of these limitations is the predominant weight given to the technological aspects rather than to the educational ones.

Another limitation is the tendency to focus on the potential of ICT in the classroom, rather than looking at the actual, eventual development of these specific school practices. The paradigm of 'learning objects' –currently dominating the study of virtual teaching and learning processes– illustrates very well these limitations.

The research based on a socio-cultural perspective may allow us to overcome some of these limitations: on the one hand, because the concept of 'activity' permits to focus the study of these teaching and learning processes looking at the real uses of the technological devices in diverse teaching and learning environments; on the other hand, because the transformation and the improvement of educational practices constitutes one of the main objectives of the researchers working from that perspective.

Within this frame, the symposium has two main goals. First, to offer a space for exchange and discussion of conceptual tools, methodologies and empirical results based on the notion of 'activity' and related to the study of the real uses of ICT in formal educational situations. And second, to promote a shared reflection about the goals and priorities that –according to the socio-cultural perspective– shall guide the future research on the incorporation of ICT to the formal educational practices.

## **Session 232 11:45 - 13:15 B2 Invited Symposium 691**

**Chair:** César Coll, Facultad de Psicología, Spain

### **IS. 5. ICT based learning: from technopedagogical design to practices of use**

**The analysis of patterns of interaction and knowledge construction in on-line learning environments: a methodological proposal.** Invited Symposium 691

**September 23, 2005 Friday**

*Benilde García, Facultad de Psicología, México*

*Alfonso Bustos, Facultad de Psicología, México*

*Susana Espíndola, Facultad de Psicología, México*

*Alejandro Miranda, Facultad de Psicología, México*

*Luis Márquez, Facultad de Psicología, México*

According to several educational researchers, in spite of the increasingly frequent use of learning environments supported by ICT's, the theoretical, methodological and research body that explains the way in how we learn from this technologies is scarce and fragmented, which points to the need of extending the efforts to study the variables involved in teaching and learning in these environments.

Fishman (2000) has argued that participant's uses of ICT's, as well as learning attainment is more influenced by the way learning activities are structured, than by media and technological resources' characteristics. Clark (1983,1994) in counterpart, has pointed out that the instructional method or design constitute the "active ingredient" of learning as opposed to the medium or technological resource. For Clark, the technological device is simply a neutral and independent aspect of the content and method. Other researchers as Kozma (1994), have stated that the more recent uses of technological resources and the potentialities that they convey, diversify greatly the patterns of interaction and are therefore not neutral. On the other hand, Cobb (1997) argues that the efficiency of a medium of a learning support system depends on the cognitive load involved for student's learning.

In line with these arguments, it can be considered that learning can be facilitated by media, and that media constitute tools for student's cognitive involvement, and not simply a neutral way of presenting contents. What counts then, is what the student's does with that medium, and not only what the teacher intends to do with it. Nevertheless, teachers play a great role in establishing, supporting and favoring an adequate use of tools, through the design and implementation of an instructional proposal. Therefore, the instructional activities' success, will depend on what Coll (2004) has denominated the "technopedagogical design", as well as on the participants' skills to use the technological tools, their content knowledge and communicative abilities.

In the context of this discussion, we analyzed two aspects of the interaction of a group of students and their professor in a graduate course in Cognition and Instruction supported by an e-learning platform. The analysis considered: 1) the patterns and variables related to media's uses (Chernobilsky, Hmelo-Silver, y DelMarcelle , 2003; Fishman, 2000; Jong-Baeg, Derry, Steinkuehler, Street, & Watson, 2000; McAnally & Pérez, 2000), and 2) the variables related to the quality of participant's knowledge construction in a discussion forum, such as type and content of messages (Derry & DuRussel, 1999) and the strategies used by participants to support collaborative knowledge construction (Gunawardena, Lowe y Anderson,1997).

**First ISCAR Congress International Society for Cultural and Activity Research.** Acting in changing worlds: Learning, communication, and minds in intercultural activities