

Applying a Teaching Strategy to Create a Collaborative Educational Mode

A

Nidia J. Moncallo

Universidad Nacional Experimental Politécnica “Antonio José de Sucre”, Venezuela

Pilar Herrero

Universidad Politécnica de Madrid, Spain

Luis Joyanes

Universidad Pontificia de Salamanca, Spain

INTRODUCTION

The evolution of ICT and the influence over educational areas has been very significant in recent years, changing conception of learning environments, communications and interactions forms, and educational material. Researchers, like Buzon and Barragán (2004), have expressed the need to create new learning (online) environments that allow teaching and learning without the time and space restrictions of residential courses, and ensures continual (**virtual**) **communication** between students and professors, or the need to find new material courses, learning strategies that allow the efficient use of new systems and educational resources emerged from technical advances (Wai-Chung and Li, 2007; Weert, 2006).

On the other hand, among the conclusions reached at the Second Virtual Congress, “Education through Internet and Internet in Education” (2004), was the need for all technological research to take into account the pedagogical, economic, and social aspects, so that a coherent integration between technology and education can be achieved.

Nevertheless, it is still difficult to incorporate the use of tools like chat, electronic mail, text editors, and forums, in other activities that involve no more than the simple exchange of information; this limits their potential and benefits. According to Friendals and Pauls (2005), the majority of Professors still depend on well-established, primitive teaching aids, like, for example, chalk and board. Their analysis revealed that the need for teaching aids in classrooms, which include educational integrative mini-applications, should be one of teaching’s main priorities.

Based on these criteria, that is, the need to effectively incorporate ICTs to make changes in the educational field, this research has focused in submitting a proposal of a collaborative teaching strategy, empirical education collaborative **teaching strategy**, shortening EE-Col, like first link to develop later on, a collaborative educational model. EE-Col’s validation will enable to lay down the basis for the

design of an exclusive model in **distributed environments** where the generated learning elements are interoperable and reusable, using shared and coordinated resources.

BACKGROUND SECTION

There have been numerous positive experiences in higher education, where **collaborative learning** has been supported by the use of electronic mail and discussion forums (Murillo, 2000; Romero, Osuna, Sheremetov, Chi, & Villa, 2003); collaborative editing systems to support groups that edit, simultaneously, from different places (Ignat & Norrie, 2004; Stavroula, Ignat, Ester, & Norrie, 2006); or experiences that show interest in the design and application of collaborative environments with use of diverse learning technique (Gonzalez, 2006; Lucero, Chiarani, & Pianucci, 2003; Roman, 2003). Similarly, there were solutions that used the Web for collaborative work (Klein, 2004; Thao, 2002). These investigations have evidenced excellent and satisfactory results when utilizing technological elements like auxiliary tools in educational processes

In investigations of **computer assisted collaborative learning**, CSCL, of Rubia, Jarrín and Bote (2003); Martinez, Gomez, Martinez, and Mora (2004); Hansson and Van Heuten (2006), among others, the use of BSCW (*basic support for cooperative work*) for education programs between two institutions, computer simulation tools use for synchronous and asynchronous communication showed their effectiveness to resolve punctual problems of collaborative learning and communications.

The analysis of these researches confirmed the benefits obtained by students in collaborative learning and advantages offered by ICT for working with distributed environments. Additionally, it helped confirm that most research is directed towards the satisfaction of specific needs, like distance-learning applications, to promote group integration in the acquisition of knowledge, or increase the use of groupware

tools in the educational process in order to improve academic achievement, social **interaction**, and communication. In general, the projects checked were focused on these objectives, while proposals of **teaching strategy** or educational models that allow the incorporation, integration, and systematization of new tools as a fundamental component in teaching processes were not found.

EE-CoL Teaching Strategy

EE-CoL, based in the integration of constructivism, negotiation and social integration, cognitive conflict, and collaborative-cooperative work principles, (concepts explained by Fernández & Melero, 1995; Martinez, 2001; Panitz & Panitz, 1998=), has, as a premise to reach a consensus through the cooperation of group members, shared authority and acceptance of responsibility of action as a group, applying techniques and methodologies of **collaborative learning** to activate critical thought and autonomous learning.

EE-CoL's fundamental motor is to be applied through the collaborative tools offered by computer technology applications, like electronic mail, videoconferences, chats, discussion and application groups, which allow the strategy to support synchronous and asynchronous interaction to have, at its disposal, the multiple advantages relating to space-time that the tools offer. Such characteristics make the new EE-CoL unique, as it results from the combination of pedagogic and collaborative principles, information-technology tools, and emerging technologies of communications and applicable to **blended learning**.

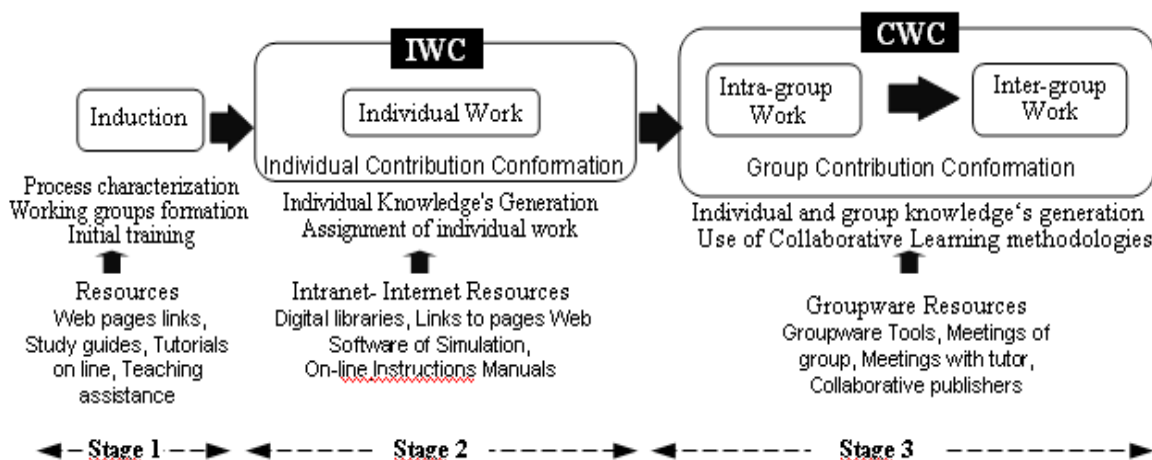
EE-CoL Stages

EE-CoL develops in three consecutive stages, *induction stage*, *individual work stage*, and *group work stage*, that complement each other, in order to achieve acquisition and accumulation of individual and collective knowledge. Figure 1 shows EE-CoL development stages.

Individual work component (IWC). IWC gives each individual the preliminary preparation to achieve certain balance between knowledge and abilities for more effective **interaction** during subsequent group discussions. It is essential for IWC to be focused on two key points: student's needs and student's motivations. In consequence, the professor must carefully select the **teaching methodology** or required activities, schedules, basic material, and online or face-to-face consultation sessions; identify the core concepts and the information available, always bearing in mind the knowledge that the students must acquire during this stage. EE-CoL proposes to use the *introductory focal activity* that specifically seeks to attract the students' attention towards a specific aspect.

Cooperative work component (CWC). The CWC's essence is the knowledge generated by **interaction** and group work through two components. The *cooperative intragroup work* organizes students in order that they can achieve their goals with an active and positive interaction accomplished through synchronous and asynchronous discussions that generate information exchange *between group members* and a global synthesis of the team's work. Intragroup interaction is activated through collaborative work strategies: *jigsaw*

Figure 1. EE-CoL stages



5 more pages are available in the full version of this document, which may be purchased using the "Add to Cart" button on the publisher's webpage: www.igi-global.com/chapter/applying-teaching-strategy-create-collaborative/13572

Related Content

A Question of Timing: The Impact of Information Acquisitions on Group Design Making

Souren Paul, Carol Stoak Saunders and William David Haseman (2005). *Information Resources Management Journal* (pp. 81-99).

www.irma-international.org/article/question-timing-impact-information-acquisitions/1282

Technology Assimilation Across the Value Chain: An Empirical Study of Small and Medium-Sized Enterprises

Pratyush Bharati and Abhijit Chaudhury (2012). *Information Resources Management Journal* (pp. 38-60).

www.irma-international.org/article/technology-assimilation-across-value-chain/61420

Using Quick Response Codes with Videos in the Laboratory

Marina Duarte, Andresa Baptista and Gustavo Pinto (2016). *Journal of Cases on Information Technology* (pp. 70-80).

www.irma-international.org/article/using-quick-response-codes-with-videos-in-the-laboratory/173725

New Bio Inspired Techniques in the Filtering of Spam: Synthesis and Comparative Study

Hadj Ahmed Bouarara, Reda Mohamed Hamou and Abdelmalek Amine (2016). *Journal of Information Technology Research* (pp. 47-77).

www.irma-international.org/article/new-bio-inspired-techniques-in-the-filtering-of-spam/160156

Benefits and Challenges of Blended Learning Environments

Charles R. Graham, Stephanie Allen and Donna Ure (2005). *Encyclopedia of Information Science and Technology, First Edition* (pp. 253-259).

www.irma-international.org/chapter/benefits-challenges-blended-learning-environments/14246