# Online Collaborative Learning as a Catalyst for Systemic Change in the Teaching-Learning Process Within a Multi-Campus Institution of Higher Education

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## ABSTRACT

This short paper describes an innovative and strategic cross-institutional collaborative project between Monterrey Institute of Technology and Higher Education (ITESM), Mexico, and the University of Texas at Austin (UT) to support systemic change in the teaching-learning process at ITESM. The purpose of the document is to share the scope, framework, content, and strategies for preparing faculty to serve as change agents, mentors and trainees of colleagues in the use of online and face-to-face collaborative learning strategies and tools. The UT-ITESM Summer Institute on Collaborative Learning and planned follow-on activities with 50 faculty is referred as one of the key components in such institutional effort.

## INTRODUCTION

Higher Education has contributed to the development of societies throughout history. The Higher Education enterprise has shown its sustainability, adaptability and transformative capability during the last 800 years. But now it has "to develop the most radical transformation and renewal ever made" (UNESCO, 1998). Such transformation is often referred to as "The Learning Revolution" and will take place in a new era of global digital competition in higher education.

Consistent with this trend, ITESM is in the process of renewal and is changing the paradigm of the university. Monterrey Institute of Technology was founded in 1943 by a group of Mexican businessmen as a non-profit, private institution of higher education. Today, ITESM (http://www.sistema.itesm.mx) is a leading nationwide educational system of international scope with 31 branches in 27 cities throughout Mexico and subsidiary offices in North America, Latin America and Europe. SACS (Southern Association of Colleges and Schools) accredits all ITESM campuses that award bachelor's, master's and doctoral degrees. Currently, ITESM has a student enrollment of 93,000 and 7500 faculty members. ITESM offers high school, undergraduate and graduate programs in different fields such as Engineering, Computer Science, Architecture, Business, Social Sciences and Humanities.

According to ITESM mission statement (http://www.sistema.itesm/mision) a new educational approach is required. As business tries to keep pace with the changes brought about by globalization and technology, the need for skilled and flexible graduates has risen substantially. The desired educational philosophy of ITESM provides a focus on the students' development of knowledge, intellectual skills, and values and attitudes necessary to be effective and contributing members of Mexican society.

## ITESM EDUCATIONAL PARADIGM

The redefinition and redesign of the ITESM teaching-learning process represents an institutional effort to develop individuals with deep knowledge in their academic field and with the desired attributes of honesty and integrity, the ability to be innovative and flexible, work collaboratively, think critically and solve problems, and start on the path as life-long learners. ITESM faculty is expected to transition from primary use of teacher-centered direct instruction and lecture-based teaching to the creation of more student-centered, interactive and collaborative learning environments. ITESM recognizes that the present teacher-centered focus on knowledge transfer and systematic instruction emphasizes individualized work, and uses few technological applications.

ITESM also recognizes that a plan must be developed to assist faculty members in migrating toward a new educational approach focused on knowledge construction and collaborative learning. This educational paradigm involves faculty integrating cognitive tools into their instructional practices and generating new learning environments in which students are more active and responsible for their own learning. To accomplish this goal it is essential to help the faculty transition from their present roles as information transmitters to facilitators of learning and for students to take greater responsibility for their own learning. ITESM's desired educational model emphasizes both knowledge and formative objectives; a set of predetermined values, attitudes and skills that must drive the teaching-learning process.

The ITESM Faculty Development Program (i.e. FDP) was designed to facilitate the transition to the new paradigm. It has a four-stage sequential framework lasting 350 hours for full time faculty members and 210 hours for part-time professors. In addition, ITESM required lap top computers of most students and provided lap tops to faculty and staff. A strong

investment in Information Technology infrastructure for all ITESM campuses enabled high speed networks with huge capacity servers to host "redesigned courses" under *Learning Space* (a client/user-server application) within the Lotus Notes groupware environment.

## UT-ITESM ONLINE COLLABORATIVE LEARNING PROJECT

With the technology infrastructure and learning resources in place, ITESM has focused its efforts on systemic change in the teaching-learning process by helping the faculty incorporate collaborative learning as an essential component of their teaching practices. To assist ITESM in accomplishing this goal, a cross-institutional collaborative project was designed to provide intensive faculty development and online support for a cadre of 50 faculty who will serve as change agents, trainers, and mentors to help other faculty in their home campuses understand the theories, strategies and technology tools of collaborative learning. The project involved close collaboration between ITESM, the University of Texas at Austin Learning Technology Center and the University of Minnesota Cooperative Learning Center in planning, conducting, and evaluating an intensive three week summer institute for an outstanding group of faculty members from ITESM branches.

The Summer Institute 2001 was held at the University of Texas at Austin and provided the participants with an opportunity to experience online and face-to-face collaborative learning as they themselves designed online collaborative learning components for their own courses. In doing so, ITESM faculty became part of a knowledge-building community in which they were able to share expertise and best practices, and assist each other in solving pedagogical problems of online learning.

The Institute provided participants with a specially designed Web-based course on Online Collaborative Learning (http://www.edb.utexas.edu/resta/itesm2001/) so that they would all experience the process of building virtual learning teams and participate in online collaborative learning projects and activities. An online collaborative learning environment was established to enable the participants to learn the tools and strategies for Computer Supported Collaborative Learning (CSCL). A virtual space using *First Class* groupware was created to enable the participants, who are distributed over the entire country, to continue to work together and support each other's efforts to change teaching-learning practices at their campuses. A metaphor of virtual ITESM Collaborative Technologies Center (CTC) was used in designing the virtual space and project activities. The participants were asked to be members of this new center that will serve as the catalyst for helping all ITESM faculty learn to use the new tools and strategies for collaborative learning.

During the three weeks, the participants also engaged in classroom learning activities focused on the theory and strategies of collaborative learning, face-to-face collaborative learning, the design of online collaborative learning projects, and the development of strategies and plans for the mentoring and training of faculty within their home campuses. Although the Institute was successful, the faculty members require continued and ongoing support as they plan and implement these strategies in their classes during the next academic year. Therefore, online support is provided and some follow-on activities are planned to support the individual, base group and regional group collaborative projects.

UT ITESM Summer Institute participants embody a critical mass that may influence the whole organization from a down-top perspective. It is recognized, however, that a parallel and intertwined top-down effort is also needed to support the ITESM faculty collaborative learning initiatives. Such an effort requires informing and engaging the institution's leaders in the effort and helping them in their role as transformational leaders if deep changes are to be made in the teaching-learning process.

In summary, ITESM has taken on an enormous challenge to transform the teaching-learning process across its 31 campuses. Such an effort is unprecedented and will involve change efforts on a massive scale. A key component of the change strategy is helping faculty integrate online and face-to-face collaborative learning into their instructional practices. It is recognized that this is not an easy effort and will be successful only with bottom-up and top-down leadership and support. This project will also provide a new environment and opportunity to explore new strategies for faculty development and support through the use of online learning communities and tools. The results of this effort will help inform other institutions of higher education facing similar challenges.

## REFERENCES

UNESCO (1998) World's Declaration on Higher Education. World's Conference on Higher Education in the XXI Century. Paris.