

Mexico: The Virtual University of the Technological Institute of Monterrey¹

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Created in 1989, ITESM's Virtual University offers a variety of undergraduate and graduate courses, programs tailored to individual companies' needs, continuing education and teacher development programs. Courses are delivered via satellite and Internet to approximately 1,400 reception sites and learning centers, including 116 in nine other Latin American countries.

Founded in 1943 and inspired by MIT's model oriented towards industry, the Technological Institute of Monterrey, Mexico (ITESM), is the most important private higher education institution in Mexico. The ITESM is known for its commitment to quality and excellence in faculty, programs, and educational services. In 1997, ITESM enrolled 70,000 students in 26 campuses throughout Mexico. It provided 31 undergraduate and 37 graduate programs. As the ITESM expanded throughout Mexico, it began to realize that distance education technologies could play an important part in delivering educational services.

Beginning in 1989, it established the Virtual University, which has expanded rapidly. It serves a wide variety of clients and settings, offering 15 degree programs, mainly at the Masters level, in administration, education, and engineering, as well as a wide variety of training and upgrading programs and tailor-made programs for industry. In the second half of 1998, it had the following enrollments:

Virtual University Enrollments August-December 1998

Undergraduate courses	2,569
Graduate programs	4,148
Teacher development programs	4,550
Teacher upgrading	9,187
Business channel	21,149
Customized programs	8,625
Continuing education	2,543
Total enrollments	52,771

The Technologies

The Virtual University now utilizes a wide variety of technologies. It has a satellite TV network managed by two up-links located in Monterrey and in Mexico City, and six channels provided through the SATMEX5 satellite. The Virtual University also shares a satellite on a digital broadcast system. In 1998, it had 1,393 reception sites and learning centers, including 116 in nine other Latin American countries, of

¹ This article is a summary of the following documents and presentations: "Education for Technology Transfer in Latin American Countries: the Case of ITESM Mexico," by Patricio Lopez del Puerto and Alejandro Reyes; "Universidad Virtual del Sistema Tecnológico de Monterrey," presentation by Ricardo Contreras Jara at a meeting held in Cartagena, Colombia, July 1997, and the ITESM web site (www.itesm.mx).

which 88 were for undergraduate and master programs, 229 for teacher upgrading, 129 for public administrators, and 956 for business programs. A reception site consists of an area dedicated to satellite classes, as well as a variety of technologies for communication, and a learning center is an area devoted to individual and collaborative learning experiences. A teleconference system is built into 18 locations. Interactive keyboards are provided to support the satellite broadcasts. Finally the Internet is becoming a powerful tool for its programs, especially those granting degrees.

The Instructional Model

For many years the educational model for virtual classes was simply a “talking head.” Since 1996, a strategic change has been introduced to focus on the learning process rather than the delivering of information. The three components of the new model are instruction, self-study, and collaboration. The instructional portion is the teacher-based model. Currently the instructional portion of courses is delivered via satellite live transmission broadcast, as well as on the Internet. The self-study portion is the student contribution to the learning process. Books, notes, Internet, and research are sources of self-study. Collaboration is the group contribution to the learning process. Technology helps this approach since virtual groups can be established through the Internet as well as at defined learning centers. Depending on the subject matter and the clientele these three modalities will be used to a greater or lesser extent.

Support to Industry

One of the Virtual University’s most successful programs has been its services to industry, especially considering the advent of NAFTA and Mexico’s desire to compete internationally, which means that firms need to change the profile of the employees. The Virtual University’s support to industry requires that: staff must want to learn; sources of learning must be available; and the work environment must be aligned with the education system. The strategy focuses on collaborative learning and working, on universal competencies, and on the assumption that the participants are involved in a technology transfer process.

A few case studies illustrate the approach to industry. In one case a new Mexican law allowed financial service companies to offer mutual investment services to workers. The new market was to be shared with private banks and the government and was highly regulated. The Virtual University was asked to train 4,000 sales representatives and 250 sale managers in one large firm on the specific competencies required to offer this new service. Content included product definition, legal issues, communication and sales role-playing. Eighteen cities were used as reception sites, the course lasted 80 hours, and the medium used was 100 percent satellite television. The training was judged highly successful and the company moved rapidly into the field, ahead of other competitors. In a second case, 25 participants were trained on learning organization and collaborative competencies in a multi-national company. The training was entirely by Internet and totaled 72 hours. The evaluation of this program was that, while the participants increased their awareness, their actions did not change and the Internet interface was not adequately user friendly. Longer-term programs, more tools, and more time were needed. In a third case, self-learning materials and satellite and video modules were provided for English language instruction to 2,191 participants. At the end of the period, 22 percent sat for the examination and 16 percent passed. These numbers can be considered positive considering that facilitators were not used and the program was strongly dependent on self-learning.

The Virtual University’s undergraduate program offers basic courses as well as specialization in areas such as administration, accounting, computing, and merchandising. The Masters programs mainly focus on administration, business, computing and education. Overall in 1998, 433 students received Masters degrees, with the largest numbers of students in administration, education, and information technology. This number compares with about 4,000 enrolled that year.

Technology for Educational Technology

A recently initiated program offers a master's degree in educational technology. The program is offered jointly with the University of British Columbia, a world leader in instructional technology, and is taught in both English and Spanish. Courses are provided in two basic areas: educational theory and practice, including curriculum development and evaluation; and design, planning and research in the use of technology for teaching purposes. Students are also asked to prepare a thesis on a subject of their choosing, to set up a technology program or to take additional coursework before receiving their masters degrees. The course is offered by satellite as well as on the Internet. These M.A. programs are fully recognized in Mexico.

Conclusion

Overall, the Virtual University of ITESM is a well-planned and structured program. In accordance with its mission, it develops high quality programs with well-defined objectives. Wherever appropriate it links with other institutions around the world. It has a well thought out instructional design as well as a strong feedback and evaluation system to improve its product. ITESM has been able to develop this system because of its initial strong linkages with industry, its commitment to high quality, and its emphasis on client satisfaction.