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## Telesecundaria of Mexico

Jose Calderoni

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Issue 12: Mexico - Telesecundaria



*A perspective by one who has spent many years working in a distance education program that is successful...*

### Mexico's Educational Satellite Program

If you drive around any large town in Mexico, you will surely find a smaller group of houses clustered into Pueblos that make up the 200 thousand communities with less than two thousand and five hundred inhabitants.

I do not know exactly why "Pater Familias" start new Pueblos missing all the advantages of living in a larger place except that Pueblos are easier to organize on top of mountains, in deserts, jungles and sea shores. The roads are non existing and residents must use donkeys to reach their homes. And how is the Federal Government going to see that their children get an education?

One way is for the government to use satellite communication to deliver educational programs by television. In Mexico if you visit the Pueblos away from the civilized world, and walk around these places, it is easy to see a house or a building with a satellite dish on top. Chances are, it will be one of Mexico's 16 thousand Telesecundarias.

Telesecundarias cover Junior High School grades, 7th, 8th and 9th,, with a total national enrollment of one million rural community students and 55 thousand teachers. This was the number made available for the 2002-03 schooyear by Mexico's Ministry of Education.

It is important to point out that it was only a few years ago that Secondary education in Mexico became compulsory, as a part of Basic Education. According to the Constitution the State must now guarantee free service and equal access up to this level.

Thanks to the ability of the state to install satellite dishes, Telesecundaria plays a crucial role in delivering quality education to students in rural communities. The only condition that each Pueblos must have a minimum of 15 to 20 children at those ages to start. A new school can be started with just one trained teacher although the average is three. Today, 37 per cent of telesecundarias students are enrolled in the first year, 33 per cent in the second and 30 per cent in the third.

The Program began in the 1960s and is considered a success. Components have been up-dated on a continuous basis. The first TV broadcast will celebrate its 40th anniversary in January 2008.

After completing a 40-week school year, Pueblo students must pursue their education in larger towns. By then they will be at least 15 years old. The urban populations have other secondary education models, such as the traditional high school, technical school and adult secondary education for those who work during daytime.

Going back to our imaginary trip, you will see an average of 20 students watching 15 minute television programs, followed by a 35 minute teacher-student discussion on topics related to that program. The 10 minutes left from the hour is for a little rest. Broadcasts starts at 8 AM and finish at 14 hours. Retransmission of the satellite delivered programs is from 14 to 20 hours, Monday to Friday and from 8 to 15 hours on Saturday.

Believe me when I say that nobody misses a lesson in these schools, not only because of the friendly programs that follow a daily sequence, but also because the TV is the main source of information in such a small town. The system is so effective, that the absentee's rate is minimal, both for students and teachers. The program completion rate stands at 83 per cent. Everybody walks. You do not find the fat boys and girls that we see today in an urban area: 50 per cent of the kids take 30 minutes to reach the school; 25 per cent take one hour; 15 per cent two hours and the rest, the one's that can compete for running in the Olympic Games, need three hours. In a flat countryside like the Yucatan Peninsula, I saw very few children coming by bicycle; they were too poor to buy one.

Telesecundaria is a part of the Distance Education Program that uses the Mexican Educational Satellite Network (EDUSAT). I participated in this project in 1995 to broadcast several television channels by satellite, not only for Telesecundaria's use, but also to provide educational and cultural programming to other population groups in Central America, the Caribbean and southern USA.

### The Telesecundaria Model

The Model has three basic components: the 15 minutes of TV programming, the especially designed texts and lesson plans, and, of course, the teachers. In the first year for example, the students may watch nearly 200 programs in Mathematics, 100 in Biology, and similar numbers of the other key subject areas. All the programs are designed to teach basic concepts in an effective way.

In each classroom, you will find three types of materials:

1. The Text Book, containing basic concepts, and providing students with essential information and topics for discussion. The texts are divided into chapters by subject.
2. A Learning Guide based on the TV programs, that involves students in group activities and explain the learning objectives for each lesson. For example there are lesson plans for:
  - o analyzing and synthesizing information and
  - o applying the contents learned. Students are engaged in a practical situation in order to apply the concepts they have just learned, as well as to ensure their assimilation.
3. A Teacher's Guide, containing technical and pedagogical suggestions, as well as additional information for the teacher.

The teachers are expected to have a complete command of all subjects taught per grade. Teachers learn something new every day, not only through the texts and TV programs but also through the daily interaction with their students and their way of life.

The advantages of the Telesecundaria are that this approach combines distance education with in-school teaching, making the learning process more dynamic and interesting. The power of the visual television image is very strong, using clear Spanish and very careful planned pedagogical presentations.

The high cost of producing a 15 minute TV program is compensated by the fact that they reach so many people. The cost per student makes Telesecundaria a low price alternative.

The better programs can be used year after year in some cases 7 to 10 years.

Both printed and audiovisual materials are correlated so that the same topic is covered twice, in addition to the emphasis given by the teacher. All materials are produced in a modular form so they can be easily updated.

Broadcasts can be received by students in any Pueblo and at all social levels, so the social goals of democracy and equity are achieved. Local native languages are of course a big drawback but there are so many of them that the cost is prohibitive. Most parents want their children, to receive an education in Spanish.

Telesecundaria instruction can be provided by a minimum of three master teachers, to communities where such an education would never be otherwise available.

For those students who learn at a slower pace, there is a telesecundaria summer program. This is an excellent opportunity to be in shape for the next academic year that starts in September. The best TV programs are chosen for them so the main topics can be emphasized.

## The Telesecundaria Infrastructure

In each Telesecundaria location, you will find at least three television sets along with satellite dishes and the decoder necessary to decompress EDUSAT's digital signal. The total cost of the decoder, satellite dish, TV, installation and school wiring is around two thousand US dollars per school. About, 10 per cent of these schools are still not a part of the National Power Grid, and therefore use solar technology to power the equipment.

The annual cost per student is the lowest of all available secondary programs and is financed entirely by the Federal Government. The actual cost varies depending of the main expenditure: the production cost of each TV presentation. Every 15 minute program is like a small Hollywood movie, with imaginative text, actors, costumes, and sound. Such productions do not come cheap. Some programs are used for years but others are redesigned to keep up with the times and to adapt to new realities.

Today, EDUSAT uses two Mexican satellites. The Satmex 5 satellite, covers all of the Americas with the exception of East Brazil). It is positioned over the equator at 116.8 degrees West, using transponder 24 C.

Solidaridad II satellite covers all of Mexico. It is positioned at 113 degrees west, and uses transponder 3 N.

Satmex 6 was launched in 2006 and is now operational. This advanced technology satellite was manufactured by Space Systems Loral (SSL).

In total, EDUSAT uses 15 channels to broadcast up to 23 thousand hours of programming. Two other channels are used to broadcast Discovery Kids plus Canal cl@se totaling some 9300 hours of programming.

Unfortunately, Telesecundaria is not open air television so the signal must be decompressed. Test are being made to open the signal for free public viewing and to use cable TV and the Internet to reach poor urban sectors of Mexico.

Satellite signal originates from Iztapalapa in Mexico City with an alternate uplink in Hermosillo, Sonora in the Northwest of Mexico.

## New Systems

Given the success and positive public reception of the Telesecundaria Program, in 1998 the Ministry started a new three year Tele-High School program for grades 10th, 11th and 12. Both students and their parents promoted the idea of offering this High-School course during the afternoons using the same local facilities.

## The Future

Continuous evaluations are conducted by the Mexican Ministry of Public Education (SEP) and by other institutions. Although the results are not always transparent, word of mouth reports suggest that these students are as good as the ones in mainstream programs. The Teacher's Union is not happy with the expansion of this program. They argue it is not preferable to hire three tele-teachers to do the work that 10 or more teachers do in traditional schools, one for mathematics, one for history and so on.

It is important to point out that everyone would like full interactivity between the students and the TV program presenters, but unfortunately that is not economically possible at the moment. It can be argued that telecommunication and information technologies will be an integral part of the future of all education, where not only images but voice and data can be reciprocally sent.

Bandwidth, of course, is the key technical issue to be tackled in the years ahead. Satellites are certainly one solution. It is only a matter of cost to add Internet to the existing infrastructure of the Telesecundaria schools.

Another of Mexico's Distance Education Programs created and set in operation in 1995 is called "Red Escolar". This Project involves the use of computer technology to assist the 9 years of basic education and provides students and teachers with access to a variety of educational resources.

Red Escolar is a joint effort between the SEP and the Latin American Institute of Educational Communication (ILCE). In the years ahead, as originally planned, the Red Escolar will involve all Telesecundarias and will connect all 125 thousand educational institutions at all levels, regardless of being public or private.

### Beyond Mexico

Telesecundaria is not intended to only serve the Mexican educational community, but also to reach other Spanish speaking communities.

In 1997 the author visited the 7 Ministries of Education in Central America. A Cooperation Agreement with Mexico was signed to develop telesecundaria programs in other Latin American countries, based on Mexican programming broadcasted by satellite through EDUSAT.

In the Southern States of the U.S. there is a clear demand for Telesecundaria among Hispanic communities. The author went to Florida and started the program there in 1996. Today, contacts can be made at the Mexican Consulates and at the Mexican Cultural Institutes in those states.

In year 2000 the author spoke to an International Literacy Conference organized by the Correctional Service of Canada in Ottawa. He spoke of "TV School" with the idea of using satellite technology to bring education to inmates in prison. Most

prisons prohibit use of Internet technology so satellite instruction is a suitable approach. The representatives of the teacher's union in the audience sought to diminish the system because it would threaten their well paid jobs teaching high school to the inmates of the Canadian prisons using old technology of one teacher for every subject.

Future vision suggests that the use of digital technologies such as satellites will increase the opportunities for distant education programs everywhere.