Achieving development goals in Belize and Barbados via the Mexican EDUSAT model

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Abstract

The presenter will examine how the tiny and recently independent country of Belize is working toward achieving global development through collaboration with regional territories. The Presenter will show how achievements have been made within the context of the Millennium Goals. Goal 8 of the Millennium Goals aims to develop a global partnership through development. In line with this development goal, Target 18 outlines the strategy to bring to fruition Goal 8: In co-operation with the private sector, make available the benefits of new technologies, especially information and communications (United Nations).

Presenter will show how various sectors have benefited from this partnerships involving new technologies that center on information and communication. The presenter will use personal professional experience as Project Coordinator of the Regional Satellite-Delivered Distance Education for Teacher Training and Human Development in Rural Areas sponsored by the Organizations of American States to show how technology can effectively cross borders. This project allowed for small territories to participate in the actual establishment of a system designed to move developing countries toward closing the gaps between those who have and those who do not in the areas of technology, education, and knowledge transfer through education-based technological access via satellite and Internet.

1.0 Background to EDUSAT

The tiny and recently independent country of Belize has been working toward achieving global development through collaboration with regional territories. In 2004, it worked closely with its northern regional partner, Mexico to develop a project proposal through the Ministry of Education (MOE), Belize and the Secretaría de Educación Pública (SEP)--that is the Mexican State Department for Public Education, to use Mexico's extensive experience in exporting satellite transmissions to the Hemisphere. With the support of the Organization of American States (OAS), that provided the necessary funds to put in place the education by satellite model, the project began in 2005 to open up education spaces for rural communities through satellite-delivered education programs.

Designed within the context of the Millennium Goals, of which Goal 8 of the Millennium Goals aimed to develop a global partnership through development, the project included both Latin America and the Caribbean. As a subset to this development goal, Target 18 outlined the strategy to bring to fruition Goal 8: In co-operation with the private sector, make available the benefits of new technologies, especially information and communications (United Nations 2000). In this case, the partnership came from an international funding agency, the OAS, and its member countries.

The project was critical in light of the existing regional processes that included the Association of Caribbean States (ACS), Caribbean Community (CARICOM), People's Progressive Party (PPP), Central American Free Trade Agreement (CAFTA), and the Free Trade Area of the Americas (FTAA). The Regional Satellite-Delivered Distance Education project proposal drafted by both Belize and Mexico, analyzed that both Latin America and the Caribbean (LAC) shared similar challenges in the provision of education to rural communities. This state of affairs often resulted in poor quality and inadequate access. The proposal rationalized that the LAC lacked connectivity because the cost-benefit ratio did not warrant the investment necessary for physical installation of landlines (Regional Satellite-Delivered Distance Education 2004, pg 5). Therefore, a significant aspect of the rationale centered on the project capitalizing on the

virtues of satellite delivered information by providing these communities [LAC] with

otherwise unavailable and/or costly content and methodologies to improve the quality of

life in their communities (Regional, pg. 5)

The InterAmerican Agency for Cooperation and Development of the Organization of American States (IACD-OAS), through its FEMCIDI Fund, agreed to finance this project named the, Regional Satellite-Delivered Distance Education for Teacher Training and Human Development in Rural Areas, and referred to as the EDUSAT Project. This project allowed for small territories to participate in the actual establishment of a system designed to move developing countries toward closing the gaps between those who have and those who do not in the areas of technology, education, and knowledge transfer through education-based technological access via satellite and Internet. The project also embraced technology as an effective vehicle to cross borders.

The MOE, Belize has had since 2005, the monumental responsibility as coordinating country to successfully install, via the implementing country, Mexico, satellites in member OAS countries by the end of project's three-year lifespan. The entire project included activities designed to integrate the EDUSAT satellite-delivered content into national programs, and to train teachers in the use of these technologies emphasizing both pedagogy and content. This paper presents the Mexican EDUSAT model, and will analyze its impact after year one in the two English speaking countries of Belize, the coordinating country, and Barbados, that is located on the Eastern seaboard of the Atlantic.

2.0 EDUSAT: the Mexican model

Education by satellite (EDUSAT) is a term familiar to our neighboring Mexican educators for some thirty-three years now. Mexico has been a pioneer and at the forefront of transferring satellite technology for use in education and for general community development in rural areas for the last three decades.

As the project coordinator acting on behalf the Ministry of Education, Belize, from 2004 to 2005, I coordinated in this fourth phase of the fourth year, from February 21-26, 2005, the coming together of six participating countries in Mexico City to pursue regional satellite-delivered distance education specifically designed for teacher training and human development in rural areas. Countries included Barbados, Belize, Costa Rica, Guatemala, Nicaragua, and Peru. The profiles of participants from the various countries included an audio-visual aids officer, curriculum coordinators, head of departments for foreign language, Telesecundaria (secondary schools that use satellite as their primary teaching tool) directors and coordinators, pilot project coordinators and consultants attached to distance education projects. Most of these personnel had been at some time in their careers, educators working directly in the classroom and with technology.

The first activity for year-one that set the pace for the implementation of the project involved a 5-night coordination meeting and training workshop with two high-ranking officials from each of the seven participating countries: Barbados, Belize, Costa Rica, Guatemala, Nicaragua, Peru, and Uruguay. The rationale for this training centered on practical and substantive reasons. The foremost reason cited was to provide participants' with first hand experience of EDUSAT's applications in the classroom. Secondly, Mexico through the Secretaría de Educación Pública (SEP)--that is the Mexican State Department for Public Education--had the advantage of installed infrastructure and experience in education for officials as well as teacher training directly linked to the EDUSAT model. In this first activity, the aim was to have high-ranking officials trained in project implementation and execution and for them to understand the complexities and the philosophy of education by satellite. It followed that once the officials bought into the idea of technological education they would better understand and support efforts to implement distance education projects.

The second activity of the project had been to purchase technological equipment for downlinking EDUSAT for each of the seven countries. Each received one satellite dish, a low noise booster, one Digicypher II decoder, and an international Data Casting Decoder. In the third activity, Mexican technicians installed seven down link equipment in the target countries, and trained personnel on the technical aspects of receiving the signal and operating the equipment.

Without doubt, Mexico's infrastructure reflected its thirty-three years experience working with developing technology for education purposes. The Mexican SEP has a tremendous network of units that complement the use of multi-media such as television, Internet, and digital technology. Its department of DGTVE (Dirección General de Televisión Educativo) works toward providing quality transmission, reception, and production of educational materials, via satellite. DGTVE-EDUSAT aimed as part of its National Goals for Education 20012006, to broaden access and equity in education. DGTVE's signals are transmitted either by satellite restricted to communications such as Red EDUSAT, or by cable systems, video-conferences, video-cassettes, and multi-media applications.

Mexican technology factored into this project based primarily on its expertise to transfer technology and knowledge

via satellite and because of its regional collaboration. One of the goals of the Third Reunion of Ministries of Education of countries belonging to the OAS was to target and improve the quality of education as well as to create greater equity by means of agreeing on a hemispheric alliance among the pertinent countries. SEP, Mexico put at the disposal of all the OAS countries, its RED EDUSAT. With the creation of the Canal Educativo de las Americas, Canal 27 (Education Channel of the Americas, Channel 27), the DGTVE incorporated within its programming, a range of education and cultural series coming from the 34 member OAS countries.

In order to better understand how RED EDUSAT can be used to develop education programs employed by Telesecundarias and distance learning for adults at the secondary level, it is important to locate the development of technology in a Latin American context, and specifically, in a Mexican framework. EDUSAT and Telesecundarias came about in the 1960's at a time when out-of-school youth at the high school level averaged 37%. Simultaneously, the illiteracy index reflected 37.80% of the population. The Telesecundarias evolved out of an Italian Telescuola model that relied on a telemaestro, monitor and teleaula (TV classroom). Over the subsequent 30 years of education via TV, the model went from an enrollment of 6,569 in 1968 to 1,146,608 in 2004 (Telesecundaria y la Red Satelital Televisión 2005, pg. 2). During this time, technological development had reached sophisticated and remarkable levels.

Telesecundarias worked on three major principles: to serve the public, the students and to operate in communities with under 2,500 inhabitants. Naturally, the innovation of Telesecundarias required curriculum reform focusing on pedagogy and content as well as technology to allow for these new forms of delivering knowledge. Therefore, Mexico's National Program 2001-2006, carried out reforms by identifying the needs of its youth population within this context of reforms that shaped the system. In doing so, the system adjusted to revise and strengthen the Telesecundaria model. The mission set out emphasized improving the quality of education and the shaping of primary school leavers through EDUSAT. EDUSAT then became the primary tool that acted as a vehicle to develop education via satellite. Everyday, transmissions through thirteen television and three radio channels are carried out.

Certainly, the success of the EDUSAT methodology and pedagogy relies heavily on satellite transmissions. However, planners and educators in Mexico recognize that although it is a powerful tool, technology cannot substitute totally the teacher. Teachers, as part of this process, are trained specifically to use the technology and to develop educational activities to complement EDUSAT programs and curricula in Telesecundarias. The Planning Unit in SEP (Dirección General de Materiales Educativas) develops educational materials. This entails orchestrating very comprehensively and well ahead of time, materials (videos, DVD's VHS, books, etc.) for every session of every course taught. The details and output are impressive. They mirror well-thought curricula and extremely well resourced machinery.

The teacher participants who came from Guatemala, Costa Rica, Nicaragua and Peru had had varying levels of experience working with Telesecundarias in their respective countries. For instance, Peru was working with the Huascarán Project that piloted the use of educational technologies in the training of teachers. The situation for Belize was different. Belize, a former colony of Britain, had followed a different type of schooling system that was based on the British Ordinary and Advanced Level Examinations, and the City and Guilds Examinations in the professional and technical fields. Later, in the country's history, it integrated American systems of curriculum and examinations, that included SAT and ACT. With the move toward integration of Caribbean initiatives, it included the Caribbean Advanced Proficiency Examinations (CAPE) and corresponding curricula.

Belize, however, had Mexican ties through a school, La Escuela Secundaria Técnica México (ESTM), established in the northernmost district with Mexican funds. Furthermore, because the SEP programs were in Spanish, and the rural community spoke the language and had the readiness to carry out education by satellite, the EDUSAT Project installed a satellite dish at ESTM sited in the rural area of the Corozal District. It is critical to note that Belize, much like the other OAS countries that formed part of this multilateral project, had come to the realization that she must become proactive and creative in opening portals in the use of educational technology.

Barbados, the only other Anglophone OAS participating country in this first phase, sent three participants to attend the technician and teacher training workshop. Unlike Belize, Barbados already had invested much more into technological literacy. Participants described the receiving institution as well equipped with computer laboratories and other technological hardware and software.

The technician/teacher-training workshop in EDUSAT in Mexico took the group to Puebla and Xiochimilco where we visited three Telesecundarias. Teachers were impressed not only by the electronic boards, Enciclomedias (interactive encyclopedias), that complemented the moving landscape of this technological methodology, but by the philosophy of these schools that integrated parents, and the community as a whole in the education of its youth. Administrators explained that with the establishing of EDUSAT, they were able to retain larger percentages of at-risk students. EDUSAT, as a tool, allowed for greater participation of Mexico's disadvantaged youth.

Belize, as the coordinating country, was in a strategic geocultural position with regard its development of education

by satellite via Mexico. While in the urban areas, most of the population speaks English (Belize is English speaking because it was a colony of Britain up until 1981 when it gained its Independence), the northern districts that border Mexico, speak Spanish as well. The same is not true of all the Anglophone Caribbean, and it is important to understand the challenges of the English speaking Caribbean that have agreed to participate in the EDUSAT Project.

3.0 The Belize EDUSAT Experiment: after year-one

Achievements

The EDUSAT Project, Belize is still in its infancy. On 1 January 2005, a search yielded a Director/Teacher for a unit dedicated exclusively to EDUSAT at ESTM. The director analyzed various programs and began working toward opening of a Telesecundaria.

The technician/teacher training program in Mexico City aimed to train participants of the project in practical applications of ICT in the classroom and for teacher training, particularly in pedagogical applications of EDUSAT's programming. The director of ESTM prepared a project proposal that was presented to the Ministry of Education, Belize in July of 2005 for the establishment of a Telesecundaria. Approved in August 2005, the ESTM prepared to open its Telesecundaria. As a follow-up to the networking carried out in Mexico City, the director contacted the Office for External Relations (Relaciones Exteriores) requested assistance in obtaining books to begin the process of setting up the unit.

Negotiations for books involved the director traveling to Chetumal City that borders Belize to the north, to receive assistance from the department responsible for the distribution of textbooks. The department provided Belize with the needed books until the school's set arrived from Mexico City. They arrived in January 2006, and covered a three-year span for the school's Telesecundaria, the duration of the program of studies.

The Belize ESTM Telesecundaria currently has an enrolment of 23 students registered for the new school year. Modeled after Mexico's Telesecundarias, it is pitched at the high school level. Students have begun taking general courses such as, Math, Spanish, history, geography, biology, physics, chemistry, English, civics, physical education, arts and drama, and technological literacy in line with the goal of the EDUSAT Project proposal. The goal aimed at Increasing and providing training and access to information technologies for their use in education and general community development in rural areas (Regional Satellite-Delivered Distance Education, 2004, pg. 6).

The students come from neighboring villages and, for the most part, are returning students who had left primary school many years ago, although there are some young students among them. Ages range from 14 to 28 years. Most of these students were unable, in the past, to pursue a secondary education because of their parents' inability to pay for fees. Students are now attracted to the ESTM Telescundaria because it gives them an opportunity to do so at a cheaper rate compared to other high schools. They contribute $200 a year, a fee charged mainly to cover maintenance of equipment.

The TV programs are rich with content and all the subjects are integrated. The program is designed so that students can go back to their community and put into practice what they learn. At this point, it is too early to assess the successes and challenges of the Belize EDUSAT Project modeled on Mexico's Telesecundarias.

The Barbados EDUSAT experiment: after year-one

Challenges

The challenges for Barbados reflect the geographical location of the island in the Atlantic. It underscores that while technology is a wonderful tool, it is also expensive and requires maintenance. The Barbados participant in an electronic communication said that cables have been water damaged due to inclement weather since November 2005, and that this has hampered progress of program viewing. Furthermore, technicians continue to have difficulty in regaining a signal from Mexico since that unfortunate damage.

Commenting on the programs transmitted in Spanish, the participant commented that are better suited to students pursuing Spanish at the advanced level. Other challenges include relevancy of subjects and materials. The predicament resides in the conflict between subject and language of instruction. For example, physics or geography programs transmitted through EDUSAT are not useful for students studying physics in Barbados if they are in Spanish. On the other hand, physics content is not part of the CAPE syllabus requirement for those pursuing Spanish at the Advanced Level.

The Barbados participant recommended the inclusion of other topics covering pollution in Mexico (air, water etc.), social programs on street children in Latin America (Mexico) such as, drugs, poverty, and the (Latin American) family

unit that would crossover into Caribbean students' cultural borders. Additional recommendations included tailor made programming of relevant TV programs and/or documentaries for the Caribbean Advanced Proficiency Examinations (CAPE).

Time zone differences between Mexico and Barbados prevent the use of the Telesecundaria schedules (not presently available). Thus, Barbados has invested in videos and digitalizing computers to save programs to view later. The easy access of schedules would enable a more organized approach to the viewing of education programs via the satellite.

Achievements

Barbados, like each of the other six participating member OAS countries, had received $6,229 USD, to purchase television and PC set ups for respective institutions in which the country's EDUSAT Project was housed.

Barbados used the funds to purchase equipment including an overhead projector, digitalizer, and dual-purpose video/DVD. This last is useful for programming and recording in a digitalized format for later viewing by departmental members/students. Second, the acquisition of tinted Spanish room windows has enhanced viewing of programs that are projected on the screen through the computer & overhead projector. Third, a sound system was purchased to enhance audio quality that is superior to that of a regular television. The fourth success also centered on equipment purchase of a pull down wide screen to allow for better viewing of TV content as opposed a small television.

4.0 Conclusion

Transmissions of the 13 channels relayed by Mexico are in Spanish and on the surface, a major challenge to English speakers. Yet, I noted that two of Barbados' participants spoke fluent Spanish (and French)the third understood the language fairly welland were excited about the satellite project. Perhaps the real challenge for us as participants from Latin America and the Caribbean is to understand how we are situated politically, linguistically, geographically, and culturally. In this way, we can devise creative ways of using this powerful tool to meet the many and diverse education needs of our countries in synchrony with existing English technological tools and distance education institutions that include the Commonwealth of Learning (COL), and The University of the West Indies Distance Education Centre (UWIDEC), operating in the region.

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