

Network of Technology Dissemination Centers: Cooperation Between Private Companies and Education

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Every country seeks development and good results for education, but serving students from very remote areas can be complex. In Peru there are companies that support educational centers through material resources, but rarely they bet on improving quality and providing care to less favored communities. Many times the State does not have the capacity to bring quality education to the most remote regions, so the help and commitment of private companies becomes a key and indispensable element for the development of towns, especially those that do not have with the necessary resources for this purpose or due to difficulties inherent to their environment. The purpose of this educational project was to contribute to the improvement of high school education in remote villages, training students and teachers in educational computing and communications skills through the Internet and modern computer facilities.

This article describes an initiative that transforms the lives of members of underserved communities by providing them with access to education and training in technology.

Keywords: technology, education, teaching-learning process, asynchronous virtual training

INTRODUCTION

Every organized community seeks the development and progress of its members. For historical and geographical reasons, communities settle in different places and regions of a country, which may have advantages or difficulties for their development and progress. National education seeks the comprehensive development of people in all areas of the country, but there are very distant communities that may have a different level of development, often determined by their natural resources or also by historical and social causes. This inequality produces notable differences in educational results. In various communities there are also productive enterprises that use and process the natural resources existing in the locality and for this they need various resources, including human resources local workforce. When these resources do not exist, the companies opt to seek and employ human resources people from other localities. Productive companies in a locality usually support the community through various projects, including helping existing schools with material resources or infrastructure, or by providing facilities and assistance for school. It is not usual to collaborate directly with the improvement of the quality of teaching and learning.

Thanks to the Hochschild Mining Company and the will of its founder Luis Hochschild Plaut, in 2002 an educational project was developed and designed, together with the Instituto de Educación Superior Tecnológica TECSUP, with the purpose of contributing to the education of areas far from the departmental capitals, giving life to an aid project called: CENTROS DE DIFUSIÓN DE TECNOLOGÍA (CDT) (Technology Dissemination Centers).

The purpose of the educational project was to contribute to the improvement of secondary high school education in remote villages, training students and teachers in educational computing and communications skills through the Internet. A modern computer classroom, adequate furniture, computer equipment and satellite Internet access would be provided.

The center would be managed by an Administrator-Teacher specialized in computer science, trained in Methodology and Didactics; who would report academically to TECSUP and would be responsible for teaching, as well as for the proper operation and maintenance of the center's computer equipment and communication systems. The CDT would serve the second and third year high school students of the local schools and their teachers, for the acquisition of skills in educational computing and the use of Internet communications.

One of the centers would be located in the city of Chalhuanca in the Department of Apurímac and its maintenance would be assumed by the mining companies belonging to the Hochschild group, located in the department. The other center would be located in the city of Pacasmayo in La Libertad, which would be financially supported by the company Cementos Norte Pacasmayo.

The first centers would begin operations at the beginning of 2003, serving schoolchildren and teachers from the state secondary national high schools in the cities of Chalhuanca and Pacasmayo.

OBJECTIVES

The objectives of the CENTROS DE DIFUSIÓN DE TECNOLOGÍA-CDT project were the following:

1. To improve the educational level of the students through the acquisition of skills in applied computing and the educational use of communication resources through the Internet for the development of their school work. At the same time, positive values were to be reinforced, as well as knowledge of the history and culture of their region. The competencies to be obtained in the CDT should be in accordance with the official programs of the Ministry of Education.
2. To enhance the teaching skills of the teachers of the schools involved, for the use of common computer programs such as word processing, Excel spreadsheet, as well as to obtain skills for the efficient search of information through the Internet to enrich the preparation of their classes.
3. Develop cooperative projects at a distance between students and teachers of the schools where the CDTs were located, to exchange information, knowledge and perspectives about their culture, customs and history of each region, using communication resources through the Internet.
4. To train in computer science to the important community where the CDT was located as the medical staff, police, municipality and other institutions, to improve their level of management through the use of digital tools.

The execution of all these activities would contribute directly to the development of the population and organized groups of the communities where the TECHNOLOGY DISSEMINATION CENTERS-CDT would be located.

STRATEGY AND ACTIONS TAKEN

Initial Approach and Strategies

After securing the commitment of the company that would collaborate in this innovative social enterprise, assuming the installation and operation costs, the characteristics of the operation and the educational and technical particularities for the integration and complementation of learning and the insertion of computer skills in the curricular program were precisely delineated.

Once the educational environment was defined, the adapted curricular contents were defined and the respective programs were prepared, comprising learning, exercises and evaluations. The grades obtained were to be integrated into the school grades to ensure student accountability. Students were to begin learning educational computing in the second and third years of high school.

Finally, the functions of the CDT teacher-administrators, their competencies, responsibilities and obligations were defined in order to achieve the planned objectives.

Actions Carried Out

The main activities planned were the following:

- Training in Methodology and Didactics to the Teaching administrators responsible for the center, who were computer professionals and were selected for their personal competencies and favorable teaching skills.
- In situ evaluations by TECSUP authorities at the project sites, to establish contact with the educational authorities, to clarify the purposes of the project and to obtain their favorable opinion.
- Technical and logistical evaluations for the acquisition of computer and communications equipment, school furniture and the search for a suitable location for the CDT.
- Installing the equipment, conducting tests and setting up the classroom for the classes.
- Coordination with school administrators to establish appropriate schedules for the second and third year high school students participating.
- Preparation of the learning material to be used in the classes.

Start-Up of Activities

It is necessary to take into consideration that in those years, the use of computers in state educational centers was very incipient, especially in remote provinces. The start of classes at the CDT was a milestone for a different way of learning and teaching in the locality. Up-to-date computer equipment would be used, similar to those used in prestigious educational institutions and modern companies. The communities involved positively valued the educational action and expressed their appreciation to the private company that supported the project.

In May 2003, classes began in the Chalhuanca and Pacasmayo CDTs with the presence of the educational authorities and representatives of the companies that supported both TECHNOLOGY DIFFUSION CENTERS.

Growth of the CDT Project

The successful results obtained in the Chalhuanca and Pacasmayo CDTs led to the involvement of other companies in other regions of the country. The simple but convincing argument was that collaboration with education in the community made it possible for the company that supported the project to be grateful, respectful and positively valued.

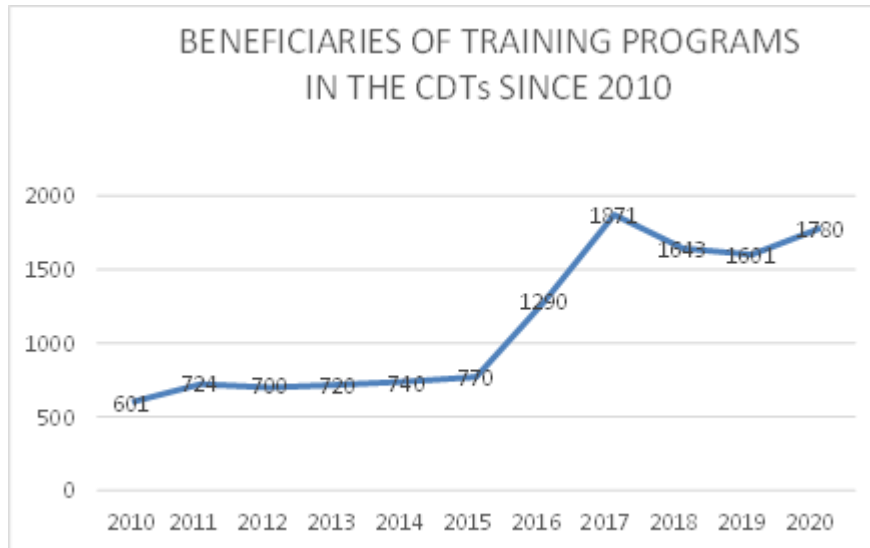
The project grew in the following years in other departments, involving teachers, high school students and community members from other localities and regions such as:

- The Technology Diffusion Center - CDT of Caylloma in the department of Arequipa.
- The Technology Diffusion Center - CDT of La granja, Paraguay and Tembladera, which were located in the department of Cajamarca.
- The Laredo Technology Dissemination Center in La Libertad
- The Sechura Technology Dissemination Center in Piura.

All of them always with the support of private companies in the areas of influence.

Currently the CDTs of Pacasmayo, Tembladera and Sechura continue to benefit school teachers and community members with efficiency, regularity and safety, to cooperate with the learning of students and teachers. Also in the needs of the community, continuing with the original guidelines that drove the CDTs.

FIGURE 1
NUMBER OF BENEFICIARIES IN THE LAST 10 YEARS



Source(s): TECSUP, 2020.

Impact of the Good Practice

Many years after the beginning of the operations of the innovative educational project CDT, it is possible to reaffirm its validity and unprecedented way of contributing to the learning of schoolchildren, belonging to the educational centers of communities located in places far from the Department capitals.

The teaching-learning process of the CDTs contributes to the improvement of the quality of basic education and, indirectly, broadens the opportunities for the achievement of local youth, seeking to reinforce positive attitudes and values. It also offers the possibility of using the CDT classroom for educational activities outside school hours, which is highly valued by the community.

It is important to reiterate that it was not only about obtaining computer skills. By including in their learning the practice of positive values such as respect, responsibility, solidarity, punctuality and identity with the community and its history, they sought to identify with their region and their country, strengthening community awareness, affection for their region and the willingness of students, teachers and all other members of the population who attend the CDT free of charge.

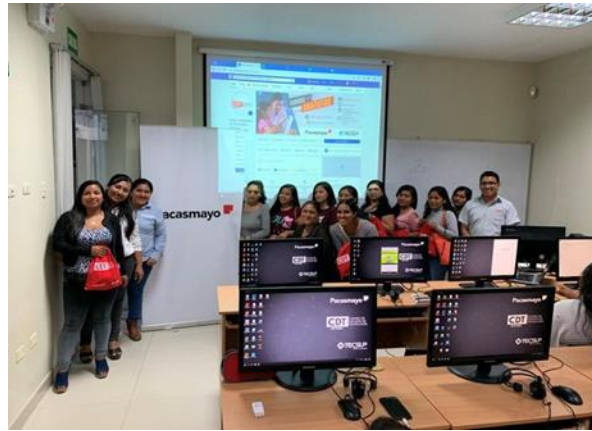
From 2003 to mid-2020, the CDTs of the various departments organized by the TECSUP Institute of Technology had served more than 16,000 students [1], teachers and members of the community.

The support of the activities by the local private enterprise is reflected in a positive valuation of the community towards the companies that support the educational project, despite the national difficulties.

Currently, in the year 2020, the educational situation in remote areas of the country has worsened due to the pandemic. It is important to mention that the activities in the CDTs have not stopped, and the asynchronous virtual activities continue.

The development of computer skills learning and the use of communication resources through the Internet, previously foreseen in this project, shows that the implementation of secure bases that could help to mitigate possible situations of isolation of populations far from the departmental capitals was worked on in advance.

FIGURE 2
CDT SECHURA



Source(s): TECSUP, 2019

FIGURE 3
CHILDREN'S PROGRAM CDT TEMBLADERA



Source(s): TECSUP, 2019

CONCLUSIONS

The project of aid to Education called CENTER OF DIFFUSION OF TECHNOLOGY - CDT currently continues to contribute to various communities in places where distance and access present difficulties for computer education. The experiences and practices achieved during 17 years, offering learning for the educational use of computers and communications through the Internet, similar to those currently offered by modern educational institutions in the world, prove to be an effective and updated solution of the company's social commitment to education.

The help of companies that develop their activities in remote areas with national education will always be a laudable activity with concrete results for the development of communities in remote areas of the country, directly involving private enterprise in the improvement of national education.

The Technology Dissemination Centers (CDTs) generate a positive impact on the communities in the areas of influence of the companies allied with TECSUP.

Through the CDTs, technological skills and the use of new resources have been improved for beneficiaries at different educational levels. They have also strengthened the soft skills of the participants and favored the employability and personal development of the community members.

The educational programs to be developed in the CDTs are planned according to a coordinated schedule and in accordance with the community's expectations and always in line with the project's objectives.

The current situation has demanded that the CDTs become more flexible and implement strategies using the virtual and asynchronous modality, in order to reach a greater number of beneficiaries. It is now possible to state with certainty that the CDTs are an efficient educational tool for the development of the beneficiary communities and for making the will for socially responsible corporate development of the companies a reality.

The activity of promoting the use and acquisition of IT skills was premonitory to the present times. It was about continuing an ideal expressed by the founder of the TECSUP Institute: "To be a work of faith in Peruvians"

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REFERENCE

TECSUP. (2020). *Servicios Educativos*.