

Edison Carvahlo, Brazil

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Profile – from ashoka.com

Country: Brazil

Primary Field of Work: Education: Development of Teaching Aids

Edison Durval Ramon Carvalho, a thirty two year old geologist and educator, has developed a program that enables schoolchildren to apply their learning and studies directly to their surroundings. The program, called Live Science integrates subjects, school, and community, and encourages student teacher cooperation.

The New Idea

The Live Science program allows students to apply academic knowledge to real life situations. The program's goals are to teach ten to twelve year old students how to apply their knowledge to their environment; educate students about the environment by integrating aspects of geology, biology, and cultural history; and involve the parents. An important result is a reduction of dropout rates.

Edison has created exercises that directly address environmental issues. For example, "Decisions, Decisions -- The Environment" is a role playing exercise for students dealing with environmental issues during an election in a imagined city. The game illustrates the dilemmas involved in making a decision concerning the welfare of the city, its people, and the environment.

Edison has also designed a program called "Vale do Piracicabe," which is a series of lectures followed by related environmental field trips. He hopes to start a "Night Watchers" class for students to observe the nocturnal environment, examining everything from human and animal behavior to plants and the stars.

Another program, called "Know Americana," involves the parents, who can both learn from their children's experience and teach based on their own. For all involved, the learning process becomes enhanced and driven home.

Introduced in the American public school system three years ago, Live Science has been met with enthusiasm by teachers, school administrators, and the community as a whole. The project now involves thirty two public schools, 8,000 students and 400 teachers. Edison plans to expand the program to at least two or three neighboring cities in the state of Sao Paulo within the next few years.

The Problem

Brazil's public schools are widely viewed as one of the country's greatest disgraces. Many educators believe the schools are collapsing structurally and the value of their education is plummeting. Wealthy families typically send their children to costly private schools rather than to the public system. The Live Science program is designed to change this by showing students the relationship between abstract classroom teaching and the real world. Edison wants to "improve the relation between theory and practice." The program seeks to redress some of the system's problems by engaging the students imaginations and stimulating their desire to learn. The Live Science program also addresses the problems that exist between teachers and students. In an

overcrowded classroom setting, the student teacher relationship can become strained and distant. Unfortunately this distance is augmented by the platoon of single subject teachers that replace the solitary homeroom teacher in the fifth grade. With these separate teachers, the correlation between each discipline is broken, causing learning to become more complex and less practical. This contributes to the high number of students who repeat grades or drop out of school.

The Strategy

In April 1990, Edison visited the Salto Grande Farm, a historical site in Americana. The farm contains a plantation house, slave quarters, a sugar cane processing area with supporting hydroelectric power, textile and paper industries, and a nearby residential neighborhood. At the time, he scribbled in the visitors catalogue that the region was an ideal location for an interdisciplinary teaching project. He followed up quickly. On August 20, 1990, Live Science took its first group of students to the Salto Grande Farm.

The programs he has implemented are designed to enhance the children's learning process and create awareness of the world around them. The project "Decisions, Decisions -- The Environment" is a role playing exercise in which groups of ten students pretend they are the mayor of a hypothetical city during an election year. During the game, the group must deal with environmental problems, such as lake pollution, sewage and garbage dumping, and the destruction of forests. At the same time, the students must cope with other urban problems, such as unemployment, industrialization, and budgetary difficulties. During the game, the students discuss and prioritize the issues. They evaluate and resolve the problems, while fully aware of the social implications of their actions.

Edison has also started a program of lectures and field trips with the aim of heightening student awareness of environmental issues.

"Vale do Piracicabe" begins with lectures on the formation of the Earth and the detrimental effects humans have had on nature in their relatively short period of existence. The lectures draw from examples that are part of the students' everyday reality. Then students go on field trips to see how society uses nature (for example, hydroelectric plants and mining sites), while at the same time trying to minimize its adverse effects on the environment. Students learn about the pollution of rivers and the destruction of forests, and they also see what steps cities and industries take to treat waste and garbage.

His cultural and historical program, "Know Americana," with the help of parents, increases student awareness of the city's culture and history. He involves parents by taking them to the sites where students do field work during the week. Thus, students and their parents discuss the environment, geography, history, and other subjects, combining the experience of the parents and the knowledge of the students into one learning environment. Eventually, he hopes to use this approach to help students think about issues like family planning, sexuality, and sustainable living.

The Person

Edison grew up in Brotas, Sao Paulo, the child of a relatively poor family. He earned his bachelor's and master's degrees in geology, while participating in teaching and educational projects. For example, while completing his master's degree at the State University in Campinas, he was involved in "Geology at the Side of the Road," which

involved fifth graders from area schools. In the beginning of 1990, he started to coordinate these two activities. He formed a team of monitors made up of chemistry, biology, anthropology, and social science teachers. He prepared them to work on geological subjects, while applying knowledge from their own disciplines to the topics. He realized then the potential of having children learn by concrete application in order to formulate an interdisciplinary connection.

After visiting the Salto Grande Farm, the idea for Live Science not only sprouted but instigated the beginnings of Edison's other learning projects.