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## JUQUEMOS AL TEATRO—Interactive Radio Instruction to Promote Critical Thinking Skills, Conflict Prevention and Resolution, and Emotional Development: A Pilot Project in Ecuador

*by Andrea Bosch, Education Development Center, 1997*

### **BACKGROUND: A MULTICHANNEL APPROACH**

The *Juguemos al Teatro* Interactive Radio Instruction (IRI) for Young Children Project takes a multichannel approach with development and delivery of the IRI audio programs as its core intervention. Multichannel learning as a strategy aims at identifying the means to integrate and reinforce learning that takes place in formal, nonformal, and informal settings. It seeks to strengthen social change strategies, within the constraints that exist, by combining a wider range of learning opportunities and delivery options than are typically found in poorer countries. Multichannel learning as a strategy also seeks to more thoroughly engage people in the learning process by increasing the availability of opportunities to learn regardless of current literacy level or distance from a central location. It seeks to take advantage of what is presently known about designing effective programs, combining education and communication strategies for long-term learning, developing complementary media materials, and using community resources and traditional systems of learning and information gathering.

The framework of the multichannel approach is based in current pedagogy. Multichannel learning builds upon the idea that learning takes place through a great variety of interactions between the learner and the outside world. These interactions commonly take place along different paths to learning, which are described as learning channels. The chosen approaches are built upon an examination of the various paths that connect or could connect the learner to sources of knowledge, skills, and information. They proceed from the premise that the chances for successful learning and transfer of what is learned to situations encountered in daily life are improved when a program makes use of more than one learning channel, including those which build on traditional oral learning styles and communication, and that channels are used in ways that reinforce one another.

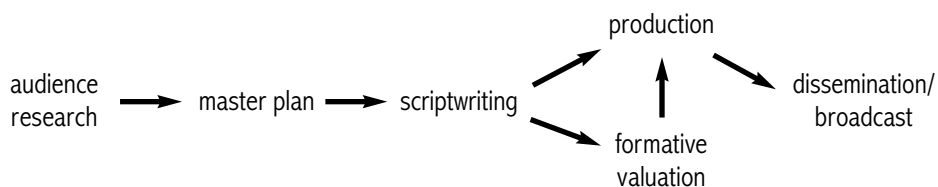
## BACKGROUND AND SOME BASIC PRINCIPLES OF IRI

Interactive Radio Instruction (IRI) is a proven methodology with twenty-three years of experience around the world and millions of beneficiaries. It emerges from the knowledge that learning is best achieved when it is interactive, relevant, well-designed and based on the learner's previous knowledge and interests. IRI involves a combination of a highly structured design and evaluation methodology, pedagogical principles based on active learning, and the use of entertainment and communication strategies consistent with the culture, subject matter, and age of the learners that are targeted. The methodology has been evaluated throughout the past twenty years and can greatly increase learning gains, increase the reach of training and educational resources, and decrease inequities between rural and urban learners, and in many cases, between boys and girls. (See World Bank Technology technical note #1, Bosch, 1997.)

IRI is also unique in its requirement that interaction occur regularly between the radio characters, the educator and learners, and the learners themselves during the audio programs in order to fully engage the listeners in the learning process. The content of the programs and the format are created during an initial design process depending on the needs or goals of the country itself. To date, IRI programs have been designed and evaluated for various age groups, subject matter and regions for math, science, English, Spanish, and Portuguese as a second language, health, environmental awareness, adult basic education, civics, and early childhood development (ECD).

The stages of a IRI methodology include:

### THE DEVELOPMENT OF IRI PROGRAMS



More information on IRI is available upon request from Education Development Center

Education Development Center (EDC) has worked in the Andean region supporting the development of interactive radio instruction methodologies for almost 15 years. In Bolivia, Radio Math, Radio Health and *Aprendamos Jugando*, a radio program for early childhood development currently used in three languages, have been developed and have helped to facilitate learning for over a million learners.

While *Juguemos al Teatro* is a departure from previous models of IRI for young children, the pilot arose from successful experiences using IRI for early childhood development and some of the characteristics are similar. For example, early childhood development (ECD) models of IRI have been developed and/or are currently being used in Bolivia, South Africa, Nepal, and Colombia. Each series targets two separate audiences: children between three and six years old and their caregivers (either ECD facilitators, kindergarten teachers, parents, grandparents or older siblings).

A recent controlled impact evaluation of this model in Bolivia analyzed the effect of the program on caregiver knowledge and behavior, parent knowledge and behavior, and child development indicators over four months and has shown that the programs are effective at increasing the

knowledge and behaviors of both caregivers and parents around early childhood development and are impacting overall child development indicators used by UNICEF in the Andean region (Suxo, 1997). The evaluation indicates that the impact on the adults is comparatively greater than the children in an initial four month period, but because the period of study was so short, is likely to be greater on the children than adults in a longer period of time as the adults implement what they have learned and use it in addition to the audio programs. This evidence confirms that the use of the IRI methodology to promote active and appropriate learning can positively impact the quality of care and support that children under the age of eight receive.

### APPLYING IRI TO DEVELOPING CRITICAL THINKING SKILLS, CONFLICT RESOLUTION AND EMOTIONAL DEVELOPMENT IN YOUNG CHILDREN IN ECUADOR

In Ecuador, EDC is in the final stages of a pilot project to develop 15 IRI programs to support critical thinking, conflict prevention and resolution skills, and emotional development in children during the crucial early years (*Juguemos al Teatro*). Plan International, The U.S. Agency for International Development through the ABEL2 project, the Instituto Nacional de Niños y Familia (INNFA), Universidad San Francisco, and CIESPAL have assisted us in designing, producing and evaluating the pilot programs.

Radio was chosen as a core learning channel in Ecuador because, as in many countries, radio offers the ability to overcome obstacles associated with low literacy levels, poor or under-utilized formal education or social systems, poor delivery systems for print and other materials dependent on roads and good weather, and the relative prevalence of the radios across the country. The IRI methodology also offers the opportunity to help young children to actively develop critical thinking skills and emotional support around key issues in the important early years where the majority of cognitive and emotional development takes place.

The Ecuadorian series *Juguemos al Teatro* (JATIRI) is unique in that it specifically targets active learning, critical thinking and emotional development through role play activities. The activities and role plays are specifically designed to actively engage groups of young children five to seven years old in seeking out information and clues, being observant and curious, working through games and experiments together, and building confidence and initiative in the learning process. Role models and various styles of involving children in age-appropriate activities are included.

The evidence for the importance of these types of interactive, supportive and structured activities during early childhood development is mounting. Research in brain development and early childhood development now definitely shows that development of cognitive, emotional and learning skills is integrated and the perception of a person's role relative to other people and the world primarily occurs very early in life and is based largely on early stimulation and children's experiences. The latest research on brain development conducted with positron-emission tomography (PET), which shows detailed images of brain function, shows conclusively that the early experiences permanently affect the organization of the brain. These early experiences are now referred to as part of the brain's early and permanent 'wiring'. The young child's "response to stimulation in the environment—looking listening, singing, playing, and interacting with adults—actually wires these microscopic connections that govern language, math, music, logic, and emotions. Non-interactive stimulation such as television, does not provide the same benefit." (Chugani, 1998) The evidence also shows that the ability for children up until the age of nine or ten to reorganize brain function is also more than twice as active as an adult's. Then the

brain loses its plasticity and the wiring that will guide how the child learns, interacts with the world, and interprets his or her potential and role is more or less complete.

This research points to the importance of having children engaged in activities, games and exercises that allow them to explore and actively determine various conclusions to a set of actions on their own (Goleman, 1996). A passive, non-interactive, or overly directed environment will result in the same expectations throughout life. Unfortunately, creating an environment where exploration and positive interaction stimulates children to think for themselves is more difficult within communities under pressures of poverty, poor education, and lack of time, energy or cultural priority in interacting with young children. Many families in poverty and overcrowded formal and informal early childhood development programs and early primary programs are likely to adhere to a style of interaction where the adult caregiver or parent feels that it is his or her responsibility to control the children and provide them with a series of uni-faceted “correct answers” rather than serve as a facilitator in the children’s growth. This style of education then extends itself into later childhood and primary school, resulting in learning experiences where young learners are not given the opportunity to actively determine their environment or experiment on their own, largely because teachers do not know how to manage more interactive activities or because there is a general fear of losing control. The earlier the child and adult learns a different way to learn, the better.

Not surprisingly, the skills associated with critical thinking skills and emotional development are also those that promote conflict prevention and resolution skills (Goleman, 1996). Children who have higher level critical thinking skills, are confident in their ability to experiment with options, and can see various pathways to solving a problem are more likely to be able to work with others to critically think through problems over the long run. In his review of the inputs to emotional intelligence, Daniel Goleman references studies that show children with high levels of emotional development and critical thinking skills are less likely over time to be on social welfare, to drop out of school, to be accused of crimes, to have diseases associated with stress, and are more likely to go on to higher education and higher paying jobs. Emotional intelligence is defined as a combination of skills such as working with others, understanding and assessing emotions and behavior, handling and directing stress, and confidence and ability to delay gratification without losing enthusiasm or motivation.

The *Juguemos al Teatro* pilot project attempts to demonstrate how activities can be set up that facilitate early development of emotional intelligence, critical thinking skills and conflict resolution. *It is at once a teacher/adult caregiver training tool and a direct hands-on program created to engage young children between five and seven in activities that promote this development.* It can be used in early childhood development centers, in first grades or in communities. The core activity of each program centers around a role play where a group of children act out a certain drama and explore alternative options to ending the story. The message to the young child is that it is their responsibility to seek out new and interesting answers. Sometimes several options are provided for the children and the opportunities to select them are pointed out. Other times, the role plays do not have selections of endings and the game of putting oneself in the shoes of another person in a safe environment becomes the core of the role play. Throughout each program, the adult is provided with information about how to set up role plays and other stimulating games and activities that will support active exploration in young children.

The main characters include:

- **Tía Fanny**, the caregiver/stage manager who sets up games and role plays and demonstrates ways to facilitate active participation,
- **Abuelo Condor**, a wise condor that takes the children to the magic world of the imagination where they observe characters in imaginary settings and act out games and role plays,
- **Mona Simona**, a silly monkey and the gatekeeper to the magic world,
- **Quique**, a young boy and visitor to the magic world, and
- **Anita**, a young girl and visitor to the magic world who models role plays and games with Quique.

### PURPOSE(S) OF PILOT PROJECT

The following section attempts to bring down the project into more concrete activities and goals. The overall objectives of the JATIRI pilot project were:

- To provide a hands-on, practical and relevant means of learning for adults (teachers in formal kindergarten and primary schools, caregivers in nonformal early childhood development centers, and caregivers in nonformal and informal community settings) on how to build problem solving and critical thinking skills, support emotional development, and instill early conflict resolution skills in young children through interactive open ended dramas aired over radio or used on cassette.
- To engage children 5-7 years old in interactive play that helps them learn creative and critical thinking skills and learn how to resolve conflicts and develop emotionally.
- To train regional trainers so that they can reinforce and strengthen local caregivers in these skills and in the use of the JATIRI programs.
- To evaluate the impact of the project through both formative and summative evaluation.
- To create reinforcing print materials and radio spots that support the efforts and distribute them.
- To build and institutionalize a network among organizations that are working towards these goals so that they will work together to decentralize multichannel approaches across Ecuador.
- To help overcome social barriers that persist by including relevant content in the JATIRI programs, including issues related to gender inequities, environmental problems, inadequate awareness of health issues, low levels of knowledge of early childhood development, and general feelings of being passive or victimized.

### THREE STREAMS OF PROJECT ACTIVITY

These objectives can be categorized into three basic streams of activity:

- activities related to the development of self-instructional audio materials to be used both through radio and audio-cassettes and reinforcing activities which support their measurable objectives;
- activities related to the development and implementation of a train the trainer system based on face-to-face training in field sites;
- activities related to the development of a decentralized implementation system that responds to demand across Ecuador and invites partner organizations to become actively involved in the institutionalization process.

### INTENDED AUDIENCE AND REACH

The national radio programs, print materials, newspaper inserts, and other supplementary activities targeted at early childhood development (ECD) caregivers and preschool teachers and at young children themselves in both urban and rural areas in areas served by Plan International across Ecuador.

Calculations to date project that program costs will be well below US\$1 per child per year. This initial calculation about reaching the audiences of two of the partners, *Diario Hoy*, a Ecuadorian newspaper, and INNFA show that over 200,000 children and adults can be reached each year (not including the shadow audience). This estimate is based on agreements with partner institutions who have asked for copies of cassettes to be distributed and institutionalized within their own institutional systems and is not based on casual radio listening. For example INNFA has agreed to copy cassettes for 900 INNFA centers (approximately 36,000 children and 1,800 caregivers). *Diario Hoy* has agreed to include inserts and audio programs in their delivery (approximately 210,000 recipients), Fundación Noboa and UNESCO have also asked for copies to be used in their projects. The formal school system in the Bolivar District has asked for copies of cassettes for their programs in Bolivar (these numbers are unknown at this time, but will be tracked).

Agreements with the Asociación Ecuatoriano de Radio (AER) and INNFA will provide free radio time which increases the reach. Local agreements to replay the programs on local stations are also being sought.

### TRAINING AND SELF INSTRUCTIONAL LEARNING EXPERIENCES

*Self-instructional learning experiences through the audio programs.* Interactive radio instruction is the central instructional methodology. It is audio-based, although print materials are available to reinforce key principles and provide a higher level of understanding. As described briefly, the methodology is based on the pedagogy of interactive radio instruction which requires that the audience participate regularly in the activities through pauses in the radio program (one element of the interactivity), that key points are distributed and repeated throughout the programs, that information and knowledge builds on previous knowledge in the culture and with children, and that the children think about and create their own ways to solve problems. The methodology

also ensures that positive role models are included and that the characters in the radio program model how to go about doing an exercise before the listening group is expected to do it. There are numerous other key pedagogical elements to the IRI methodology that are described in more detail in the document on IRI that can be obtained from ECD.

The *Juguemos al Teatro* series is created for two audiences: caregivers (parents, ECD professionals, older siblings using child-to-child). The messages for the caregivers function as self-instructional ‘training’ on how they can improve their interactions and activities with young children and is delivered in the practical hands-on approach. The content of the programs is spelled out in the master plan (the first phase of the workplan involved writing the master plan). There are at least two measurable objectives for the children and two for the adults in each program. The child-oriented measurable objectives involve problem solving of activities through role plays. There is also a central theme (or value) that is included as per the request of several local organizations and teachers. The information on critical thinking and problem solving skills is knit into the activities and role plays. The adult-oriented measurable objectives include strategies for the caregivers in each program to manage young children AND give them the ability to invent solutions to problems actively.

The overall theme of the series is to teach the processes of facilitating learning to caregivers. Therefore, activities that support all areas of child development are included and the adult is shown how to pass the control to the children so that they can explore their own emotions, cognitive process and abilities. Changing this pattern of interacting with children is thought to lead to a greater ability to problem solve in young children, in increased school achievement, and better social adjustment throughout life.

Evaluations in Bolivia show that the audio programs serve as a useful self-instructional tool after six programs without additional face to face training. Evaluations in Nepal show that they can be demonstrated to work autonomously after three.

*Peer learning and Entre Nosotros radio spots.* Local people will be encouraged to become the experts through peer communication strategies. In these exercises, mentors will be sought to work with street children, and adults will be encouraged to give their own games and activities. Five radio spots called *Entre Nosotros* have been planned in the Quito area and local groups would be invited to initiate local versions of the series.

This activity is intended to set up systems for peer learning. It will be available over the airwaves or on cassette. It will be available to whomever can listen and therefore it is unknown how many people will be impacted. The budget for this activity was dramatically reduced during negotiation of the proposal and the workshop element was removed from this budget. The addition of the participatory workshops should be considered for future activities.

## DECENTRALIZED IMPLEMENTATION, INSTITUTIONALIZATION AND SUSTAINABILITY

To reflect the reality of life in Ecuador, implementation and institutionalization is decentralized and pegged to partner field offices and local constituents. In some places, local radio stations will air the programs (the Bolivar province made agreements with provincial radio stations, for example), in other places cassettes and training are provided through INNFA and a group of local foundations and NGOs (a well-developed network has already been developed in the Guayaquil area complete with trainers that work in these institutions). It is important to begin the institu-

tionalization process from day one so that the programs can be used effectively and can be sustained.

In terms of demand, in other countries where the interactive radio instruction methodology has been designed and is being implemented for early childhood development (Bolivia, Nepal, South Africa), EDC has found that motivating parents and caregivers to use the programs has not been a problem. Instead, once a group of adults have used the programs a few times, experience suggests that the demand has grown more quickly than funds were available to fill. Because the methodology does not require that the adults have high levels of education and provides them with practical hands-on examples, the adults who used these programs have become naturally motivated.

We found, for example, that an informal ‘black market’ of our cassettes developed in Tarija, Bolivia, ironically while we were in the midst of a controlled study. Cassettes were copied and distributed among professional ECD caregivers and given to parents as examples of the activities that their children were involved in. They included the programs as part of their parent involvement component and claimed they helped in community development.

Still, the institutionalization process is important to prepare in advance and EDC has been following a basic plan since the pilot project began in December 1996. The plan has four components:

- the development of a national body with local chapters that will guide implementation beyond the life of the project;
- decentralized implementation so the programs can be included in a variety of programs/settings;
- dissemination systems that are institutionalized and cost-effective;
- a train the trainer system that builds the capacity of local trainers to provide support.

The JATIRI partnership was created to guide, increase and diversify implementation. In 1996-97, formative evaluation was conducted through the organizations in this group so that distinct settings could be tested and the programs could be institutionalized within the government and various civil organizations from the beginning.

The programs are also created to be used in a diversity of settings, from community centers that use CHILD-to-CHILD to formal Plan International-supported early childhood development centers. Literacy levels and economic level are not factors. The cultural aspects and songs have also made the programs attractive and in other countries parents and caregivers request copies regularly.

The dissemination system is a vital part of the institutionalization plan and is the main reason that we made agreements for free radio airtime and reproduction of cassettes. Having these “costs” covered in the future helps to ensure that they will continue to be available.

The train the trainer methodology also makes the programs last and motivates local participation. Once the materials are created, local people selected to be trainers will be certified to pro-

vide this “professional” service. They will be equipped with the materials (video, guidebook, cassettes) to provide training in the regions so that parents and caregivers can go beyond the basics of hearing them on the radio.

The JATIRI (APOYO) partnership currently consists of:

The government agency Instituto Nacional de Niños y Familia (INNFA), UNICEF, CIESPAL, USAID, Plan International, Asociación Ecuatoriana de Radio (AER), Rotary Club, Fundación Noboa, Diario Hoy, and EDC.

The partners’ contributions have been the following:

**INNFA:** An agreement was signed with INNFA that ensured that they would:

- provide free airtime for the *Juguemos al Teatro* programs through agreements with AER and other radio associations which provide free air space for social programs (saving major costs and contributing to sustainability);
- reproduce the cassettes as needed for 900 INNFA centers across Ecuador;
- participate and cover local costs for formative evaluation in two regions: Guayaquil and Cuenca;

**USAID:** USAID financed the development of the methodology and pilot of the first five programs (from the USAID funded ABEL2 and REX projects).

**Diario Hoy:** An agreement has been established with Hoy to provide a cut rate on Saturday inserts and the printing of posters and materials for their distribution of 72,000. They provide an additional 2000 copies free for distribution outside of the newspaper.

**CIESPAL:** CIESPAL provides free office space and meeting space to EDC. They also conduct all the production through a subcontract.

**UNICEF:** UNICEF has facilitated contacts for formative evaluation in several sites in Ecuador.

**Asociación Ecuatoriano de Radio:** An commitment was made with EDC to review radio stations within the association (both community and national) and organize free airtime for the programs. This constitutes a major cost savings and contributes to sustainability.

**Universidad San Francisco:** USF is conducting a preliminary investigation of the USAID pilot programs.

**Plan Internacional:** Plan has financed the development of 10 programs to continue the pilot in their six field offices.

**Fundación Noboa:** Fundación Noboa has signed an agreement with EDC to cover all costs related to the reproduction of materials and formative evaluation in two provinces on the coast: Los Rios, and Guayas. They will also pick up costs related to airing programs on radio in these areas.

## NEXT STEPS

The JATIRI pilot project is scheduled to be completed in November 1997. A preliminary study conducted by Universidad San Francisco suggests that the JATIRI programs are particularly important in Ecuador because of the potential to break long-felt habits of passivity in Ecuadorian institutions of care and learning. The study stated that demonstrating how young children could be creative and active problem solvers given encouragement and opportunities was seen as a benefit by caregivers and teachers after only five programs. Caregivers and adults began to see how they could get children actively engaged without feeling out of control. But there was a lot of work to be done.

The JATIRI APOYO network is active in Ecuador. Contributions to the group vary depending on the nature of the member. As mentioned, some provide formative evaluation specialists and sites. Others provide reproduction of cassettes and airtime. Together, the group is currently working to see if the funds can be secured to continue the pilot project and create more programs in the series.

*References not available.*

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