
SITE VISIT: ENHANCING EARLY CHILD DEVELOPMENT—The Role of the Media in South Africa, The LearnTech Project

Contributors: Terrence April, Andrea Bosch, Gayla Cook, Phyllis Crockett, Bronwen Eckstein, Kathleen Martin, Tshidi Mhlambo and Tembeka Nkamba.

Demographic material was compiled by the Education Foundation. March 1995.

EXECUTIVE SUMMARY...1
INTRODUCTION...4
BACKGROUND: THE DEMOGRAPHICS OF PRE-SCHOOLERS AND ADULT CAREGIVERS IN SOUTH AFRICA...5
THE CHANGING FACE OF THE MEDIA FOR ECD...14
IN SOUTH AFRICA...14
LESSONS AND EXAMPLES OF VISUAL EDUCATIONAL MEDIA FROM OTHER COUNTRIES...19
DISTANCE EDUCATION AND INTERACTIVE RADIO INSTRUCTION FOR ECD...27
THE CHANGING FACE OF THE MEDIA FOR ECD IN SOUTH AFRICA...32

Given the magnitude of the educational problems in South Africa, time is of the essence. The country is starting late and must catch up quickly. We must build on the experience of other countries, adapting what they have learned to meet the realities of South Africa. There are many basic considerations. Issues such as teacher, parent and care-giver training must be tackled in basic reading, writing and language skills. The media can now be used to train the trainers in such adult basic education as well as life skills while showing how they can use the media for early childhood development.

Prepared by the Education Development Center for the LearnTech Project with funds from the United States Agency for International Development/Pretoria through contact DPE-5818-Q-00-0045-00.

I. EXECUTIVE SUMMARY

The picture of South Africa that emerges from this report is of a country with enormous disparities in wealth, education and opportunities. In the past, far from trying to lessen disparities, successive apartheid governments deliberately promoted them in the name of "separate development." The statistics in the section on demographics in South Africa show clearly the effects of decades of race-based politics.

South Africa's first democratic non-racial government under President Mandela is determined to right past wrongs and to ensure that in future all South African children are given an equal opportunity to realise their full potential. Education is therefore a top priority of the government's Reconstruction and Development Program. Invaluable work is also being done in the educational field by numerous NGOs around the country. Despite the magnitude of the problems and the limited financial resources available to deal with them, there are grounds for optimism that the

situation will improve substantially in the next few years.

This research report is part of the activities of the Education Development Center and the LearnTech project, a USAID funded worldwide project. In South Africa LearnTech has adopted an action research approach in investigating the feasibility of incorporating interactive radio instruction (IRI) methodology and other media into new training modules and other instructional tools for early child development (ECD).

Included here is a background report on the demographics of young children and the adults who care for them in South Africa and their use of radio, print and television. This report also includes information about the potential of media use, including interactive radio instruction, for early child development both in South Africa and in selected cases around the world. Practical recommendations are made which show how media can be used to facilitate learning in adults and in children and the delivery systems that can be accessed in South Africa. Finally, individual reports on three regions of South Africa explore the availability of organizations and individuals who can be involved in a early child development media project in order to build a concrete network of individuals and institutions which can work together.

Education and the media are two areas where change is occurring quickly and the stage is being set for all South Africans to soon have a higher literacy level and have the ability to use the media and distance education for educational and cultural purposes. In the meantime, however, much work is to be done. Over the past year, the opportunities and responsibilities which face South Africans have changed dramatically. The systems of media and education which were in control for generations are suddenly in a state of flux and under enormous pressure to decentralize and bring in black and colored South African expertise and priorities. In response, the Government and the RDP and the private sector are struggling to achieve a new course of action which will fulfill South Africa's dream of having a fair and unbiased society while maintaining the budgetary means to be the gateway to Africa. It is a tricky business to be fair and be a leader at the same time. To summarize some of the major points of this document,

1. Radio use is high in South Africa, particularly with black populations in rural areas.

According to the Human Sciences Research Council (HSRC), black households are tuned into radio for an average of nine hours per day; the television is on for five hours per day. But according to the HSRC report, the overall use of the two media does not involve children in any significant way. In some areas of South Africa, radio is the only form of communication with other communities beyond a few miles that a family may have. In some rural areas, educare (early child development) training organizations often use the community radio networks to announce meetings, health interventions and other important events and report they are the only reliable source of immediate communication available.

2. South African has large percentage of very young. South Africa has a very young population by world standards. Of the total population, 13% is under the age of four and 18% is under the age of seven. In some areas, including most of Bophutatswana and the Transkei and parts of Elbow, Gazankulu, KaNgwane and KwaZulu, more than 20% of the population is under the age of four.

3. Native tongue is a central issue. Many adult South Africans do not speak English or Afrikaans and have not had adequate exposure to a quality education and the ability to use the

media and distance education. Under white control, two languages (English and Afrikaans) were the only official languages. Now there are eleven.

4. **Primary school advancement improved by ECD efforts.** Evidence suggests that investment during the preschool years improves primary school advancement as well as lays down the foundation for skills in conflict resolution and problem solving. In the mid-1980s the Department of Education and Training developed a bridging program as part of the first year of school which was government-funded and which effectively provided a year and in some cases two years of pre-primary education for children who need it. By 1992 the program involved some 400,000 pupils in 1,230 schools. The failure rate in the first year of primary school for these children was reduced from 21% to 3%.
5. **Some provinces worse off than others.** While the whole of South Africa would benefit from improved circumstances, the provinces with the worse overall profiles in terms of quality of life and social development indicators including poverty levels, water supply and nutrition are the Eastern Cape, KwaZulu-Natal and the Northern Transvaal. The second group of regions considered in the worst shape are Orange Free State and Eastern Transvaal. When one takes additional data to look at per capita education expenditure levels, teacher/pupil ratios, concentrations of students in primary schools and primary school drop out rates, the provinces follow a similar pattern, almost invariably. Although blacks are the most disadvantaged overall, there are pockets of poverty, illiteracy and poor health in many colored communities.
6. **Government expenditure on ECD low to date.** In 1993 about 30% of white children under seven had access to some form of preschool provision compared to 10.7% of black, colored and Indian children under seven. And looking at these figures, the overwhelming number of children in pre-school programs are white. Government expenditure on each black child was only R38 per year compared to R752 per colored child, R118 per Indian child and R1 684 per white child.
7. **Black parents pay for ECD services.** Parents and caregivers with low literacy skills have large responsibilities to provide quality educational environment for young children both in educare centers and at home. In most cases where educare is involved, parents pay for it themselves. About 80% of operational costs of educare services for black children comes from school fees paid by their parents. This action also indicates the value of childcare to poor South African families.
8. **Both adult learners and children need support.** The data indicate the strong rationale for ECD activities, both programs which target children and programs which target adult learners, as an intervention to the high primary school drop-out rate, the high number of children out of school, and extensive health and nutrition problems among large numbers of the pre-school and primary school population. The data strongly indicates that ECD interventions must be directed as much to caregivers as to children, and must address illiteracy, low education levels and poor living conditions.
9. **Educational media for ECD around the world has been much more successful when it targets adult learners as well as children.** Research around the world shows that media

programs for ECD is much more effective at improving the child development practice in center-based and home-based programs as well as with the general hard-to-reach population when it targets adults as well as children. Programs which incorporate learning strategies rather than just entertainment are also more effective.

10. **Few high quality media programs created to improve educational quality.** No programs exist in South Africa and few programs exist in developing countries for the purposes of increasing the quality of educare centers for both adults and children. None has attempted to do what interactive radio instruction has done in Bolivia: improve the quality of educare through addressing the learning needs of both audiences
11. **SABC has little experience with educational programs for the poor, but is looking for alliances.** The SABC and community media projects have not exploited the opportunities to provide educational programs in a variety of languages to these adults and their children sufficiently. The SABC also does not have experience building interactivity into programs with the purpose of enhancing quality in educare centers. The SABC has taken an interest in decentralization and broadcasting quality educational programs and has asked educare NGOs and EDC to collaborate with them, however.
12. **New corporations provide both opportunity and obstacles.** Large corporations are coming into South Africa quickly which provide both an excellent opportunity for new educational and economic resources, but also the potential for South Africans to be exploited in a new and unfamiliar way.
13. **Programs targeting adult should incorporate learning tools which realistically help them learn.** Adult learners of early child development do not have interactive tools they can use as part of their professional courses which adequately reflect the cultures and priorities at hand. For illiterate parents, no programs for learning about ECD are available.

II. INTRODUCTION

The Education Development Center assembled this research on the potential of media to enhance early child development in South Africa as part of its LearnTech Project activities. LearnTech is funded by the United States Agency for International Development. The purposes of the research included the following:

- To delineate the educational needs related to early child development (ECD) in South Africa, both for young children and adult learners; and
- To explore the changing face of media in South Africa and opportunities for ECD use, especially in poorer areas through reviewing the technology, programming and distribution implications, and selected media efforts directed to early child development to date; and
- To provide an illustrative inventory of the regional resources available, including cultural

resources and media production facilities and media producers, guided by their existing experience or a willingness to work in the field.

This report reviews the literature in using media to enhance ECD in South Africa. The report incorporated numerous consultations by LearnTech staff and consultants, from the United States and South Africa, over a 8-month period. There was also extensive interaction with early child development workers and media producers at two workshops in South Africa, one in November 1994 in Durban and the other in February 1995 in Johannesburg.

The inventory of regional media resources for early child development, provided in the appendix, lists more than 80 entries. While limited to three regions, it provides an indication of the rich base upon which South Africans can draw to address the serious dearth of early child development facilities and activities in South Africa.

The reliability of data and a note on terminology

The figures cited in this report are as accurate and up-to-date as possible given the following:

- 1) Statistics for the former homelands and independent states (see "Territorial boundaries" below) are in many cases either unreliable or unavailable.
- 2) Education in the past was administered by numerous race-based provincial departments, and researchers have found it difficult to compile reliable, consistent and current education statistics for the country as a whole. The most recent year for which statistics are available for all communities is 1991.
- 3) There is ongoing controversy about the reliability of the data contained in the official 1991 census. Nevertheless, these figures are considered the most accurate thus far for any South African census.
- 4) Statistics contained in this report are derived from a number of different sources and their figures do not always concur exactly. This is because of gaps and discrepancies in the official data for which they have had to make estimates and adjustments.
- 5) With the inauguration of the new government in May 1994, the country entered into a period of rapid change. Thus many of the statistics in this report may soon be out of date.

The question of racial categorization has been a sensitive one in South Africa. While there is a current trend to move away from collecting data according to race category, one can only see the devastating impact of apartheid by using the racially based statistics which describe the vast inequalities in the country, the legacy of apartheid. Any projects which are eventually developed for the most disadvantaged of children and caregivers must accurately identify these communities. In recent years there have been different, sometimes confusing, usages of the terms "black" and "African" in South Africa. This report uses the terms "black" to refer to ethnic Africans.

III. BACKGROUND: THE DEMOGRAPHICS OF PRE-SCHOOLERS AND ADULT CAREGIVERS IN SOUTH AFRICA

Territorial boundaries

Prior to May 1994 South Africa was divided into four provinces (Transvaal, the Cape, Natal and

Orange Free State). The interim constitution abolished these and created nine new provinces: Eastern Cape, Northern Cape, Western Cape, Orange Free State, KwaZulu/Natal, the PWV (since renamed Gauteng), Northern Transvaal, Eastern Transvaal and North West (see Map 1).

The apartheid government created four "independent states" (Transkei, Bophutatswana, Venda and Ciskei - often referred to as the TBVC states) and six homelands (KwaZulu, KwaNdebele, Gazankulu, Lebowa, KaNgwane and QwaQwa) to which millions of blacks were forcibly relocated (see Map 2). Although these were reincorporated into South Africa in May 1994, there are frequent references to them in this report as they are in most cases the poorest and most populous areas of the country.

Population

Under apartheid, every South African was categorized according to race. The four main race groups were blacks, coloreds (people of mixed race), Indians (and other Asians) and whites. Race-based statistics are still used because they are essential for an understanding of the problems created by decades of "separate development." The population in 1994 was just over 40 million, split almost equally between urban and rural dwellers:

	Rural	Urban	Total
Eastern Cape	478 318	142 838	621 156
Northern Cape	58 040	542 589	800 629
Western Cape	557 703	178 696	3 736 399
Orange Free State	1 267 862	1 485 167	2 753 029
KwaZulu/Natal	5 187 686	3 293 379	8 481 065
Gauteng	307 756	6 663 893	6 971 649
Northern Transvaal	4 656 846	470 190	5 127 036
Eastern Transvaal	2 049	867 580	2 916 803
North West	2 394 267	1 069 444	3 463 711
TOTAL	21 157 701	19 713 776	40 871

Population density

Population density (see Map 14) ranges from 365 people per square kilometre in Gauteng to two per square kilometre in the arid Northern Cape. The western Orange Free State and Northern Transvaal are also very sparsely populated with fewer than 10 people per square kilometre. However, parts of the Northern Transvaal corresponding to the former homelands of Lebowa, Gazankulu and Venda have high population densities, as do most of the other former homelands and TBVC states. Very high population densities (over 500 people per square kilometre) are found around Johannesburg, Durban/Pietermaritzburg, Cape Town, and parts of the former Ciskei, KwaZulu and KaNgwane

Racial distribution

Of the total population, approximately 75.8% are black, 13% are white, 8.6% are colored and

2.6% are Indian. Though there is a high degree of racial mix throughout South Africa, especially in urban areas, the following concentrations can be noted:

- 1) In the former independent states and homelands 99% of the population is black. (See Map 15) The black population is concentrated in the east, in areas that are also among the poorest and most populous in the country.
- 2) The colored population is concentrated in the west, where it constitutes almost 60% of the population in most districts. Through much of the rest of the country less than 10% of the population is colored.
- 3) The Indian population is located largely in KwaZulu/Natal, especially around Durban. There are small Indian populations in Gauteng, Northern Transvaal and Eastern Transvaal.
- 4) The white population is fairly evenly spread throughout South Africa except in the former homelands and independent states where there are few whites.

Pre-school population

South Africa has a very young population by world standards. Of the total population, 13% is under the age of four and 18% is under the age of seven. In some areas, including most of Bophutatswana and the Transkei and parts of Lebowa, Gazankulu, KaNgwane and KwaZulu, more than 20% of the population is under four (see map 32).

Blacks constitute 75% of the total population but 82% of the 0-6 age group.

1991 figures per race group				
	Total Population	Children 0-5	Children 5-6	Total 0-6
Blacks	28 712 400	4 064 200	774 000	4 838 200
Coloreds	3 278 300	376 800	71 800	448 600
Indians	986 600	100 600	19 200	119 800
Whites	5 061 000	361 300	68 800	430 100
TOTAL	38 038 300	4 902 900	933 800	5 836 70

School-age children

School-age children (6-17 years of age) are predominantly black and are concentrated in Gauteng, the Orange Free State, parts of the Eastern Cape, and KwaZulu/Natal (see Map 100). It is therefore in these areas - i.e. the eastern half of the country - that the problems of low education levels, inadequate facilities, high drop-out rates and overcrowding are most severe.

This year the new government has made a concerted effort to provide schooling for all South African children. Formerly under-utilised white schools have opened their doors to children of all races and this has relieved overcrowding in many black and colored schools.

Pupil-teacher ratios

Pupil/teacher ratios range from 41:1 for blacks to 23:1 for coloreds, 22:1 for Indians and 19:1 for whites. (See Map 34) In KwaZulu/Natal and the Eastern Cape the ratio for blacks averages 45:1, but some districts have ratios of between 50:1 and 67:1. Another serious problem is the fact that almost two-thirds of African teachers are either unqualified or under-qualified and are also less experienced than teachers of other race groups.

Primary school pupils out of school

Children may be out of school for a number of reasons: they may be constrained by poverty, or required for domestic or farm work, or they may drop out because of difficulties experienced in overcrowded and ill-equipped schools. There is a particularly high drop-out rate in black schools at the end of Standard 3 when English becomes the language of instruction.

In many districts in the Northern Transvaal, Eastern Transvaal, KwaZulu/Natal and the North West between 25% and 50% of black primary school children are out of school. Interestingly, most of these districts are not in former homelands but in rural areas of "white" South Africa formerly administered by the Department of Education and Training (DET).

In the last three decades, 25% of black children who entered the first year of primary school dropped out after one year. A high percentage of black and colored youngsters repeat a year or drop out of school. One reason for this is the lack of pre-school preparation.

Secondary school enrolment

In the country as a whole, 27% of black pupils and 26% of colored pupils are in secondary school compared to 40% of whites and 39% of Indians. Black high-school enrolment is relatively high in urban areas (30-45%) but very low (under 15%) in northern KwaZulu/Natal and parts of Transkei.

Language

South Africa is a polyglot nation, and this is recognized by the interim constitution. Whereas there were only two *official* languages (English and Afrikaans) under white rule, there are now 11: Zulu, Xhosa, Sotho, Afrikaans, English, Tswana, Shangaan, Tsonga, Swazi, Venda and Ndebele.

Zulu, Xhosa, Sotho and Afrikaans are the most widely spoken languages, with almost three-quarters of the population claiming one of the four as their first language. According to the 1991 census the language groups are constituted as follows:

Language	Numbers	%
Zulu	8 343 587	22
Xhosa	6 729 281	18
Sotho	5 951 622	16
Afrikaans	5 685 403	15

English	3 422 503	9
Tswana	3 368 544	9
Shangaan/Tsongo	1 439 809	4
Swazi	952 478	2
Venda	673 538	2
Ndebele	477 895	1
Other	640 277	2
(Other Asian and European immigrant languages)		

Whereas one language predominates in most provinces, there is a rich linguistic mix in Gauteng and the Eastern Transvaal with no single language dominating. In the following table only languages spoken by more than 5% of the population are listed (TABLE NOT AVAILABLE).

English

English is the first language of only 9% of South Africans, but its importance is much greater than this figure indicates. Firstly, most South Africans speak more than one language, and English is the second or third language of many.

Secondly, English is widely viewed as a means to promote national unity. Because it is the predominant language of science, technology and business, knowledge of English is seen as essential for entry into the job market.

Moreover, since the Soweto uprising in 1976, when black high school students rejected Afrikaans as the language of learning, English has been the overwhelming choice as the medium of instruction in black schools.

In future, local communities will determine in which language their children are taught. It is likely that dual-medium and multi-medium schools will become the norm, with mother-tongue instruction in the early years combined with development of English language skills to equip children for further education and entry into the workplace.

Adult educational levels

There is a clear correlation between race and educational levels attained because of the gross disparities in per capita expenditure on black and white education (see "Government expenditure on pre-school children" below) and the inferior standards laid down by the Bantu Education Act for the education of black children in the past. The figures below are based on the 1991 census and exclude the TBVC states, for which statistics were unavailable.

Adult literacy

Using completion of Standard 6 (Grade 8) as a measure of retained literacy, less than half the total adult black population (43%) is literate (see Map 35), compared to 97% of whites. Literacy is higher among blacks living in urban areas (52%) than in the former homelands (42%) or rural "white" South Africa (28%). In KwaZulu the literacy rate is less than 25%. Because of the high illiteracy rates among black adults, black children as young as seven frequently have more literacy skills than their parents.

About 56% of coloreds (68% in urban areas and 39% in rural areas) and 79% of Indians are

literate.

Literate persons as a % age of the adult black population

Eastern Cape	44
Northern Cape	33
Western Cape	48
Orange Free State	38
KwaZulu/Natal	42
Gauteng	53
Northern Transvaal	42
Eastern Transvaal	35
North West	26

Adult Matriculants

Only 8% of black adults in the 25-64 age group have matriculated (i.e. completed high school) in comparison to 61% of whites, 27% of Indians and 10% of coloreds in the same age group. The percentage of black matriculants ranges from 10% in Gauteng and the Northern Transvaal to 4% in the Northern Cape and North West.

University graduates

There were 31 238 black South Africans with university degrees (i.e. 1 per 1 000, or approximately 0.1%) in 1991. There were 13 860 degreed coloreds (4 per 1 000), 20 677 degreed Indians (21 per 1 000) and 345 249 degreed whites (68 per 1 000). Though whites constitute only 13% of the population, there were more than five times as many white degreed persons as degreed persons for all other race groups combined.

Employment

The following table shows the relationship between employment and education levels for the different race groups, based on 1991 census figures (former TBVC states excluded):

	Percentage employed			
	Blacks	Coloreds	Indians	Whites
Illiterate/ semi-literate	51	55	32	46
Literate (Standard 6 +)	47 *	63	62	70
Matriculated	73	86	80	79

* This figure rises to 54% in urban areas but drops to a low of 28% in the former homelands.

As far as the black population is concerned, it is notable that literacy does not seem to improve employment opportunities, whereas those who have matriculated have a significantly higher chance of obtaining work.

Poverty

The current minimum living level (MLL) has been calculated at R1 500 per capita per annum by the Bureau of Market Research. The following table is based on that figure:

% of households living in poverty 1991

Eastern Cape	72
Northern Cape	51
Western Cape	26
Orange Free State	57
KwaZulu/Natal	57
Gauteng	23
Northern Transvaal	77
Eastern Transvaal	57
North West	53

In the former homelands, excluding Bophutatswana, more than 78% of the population live in poverty (see Map 57). Poverty is lowest in metropolitan areas and in mining and electricity-generating areas. In the Northern Transvaal, which is the poorest province, areas with highest and lowest percentages of households living in poverty are found in close proximity, the poor areas corresponding to former homelands.

Though poverty is concentrated within the black community, there are numerous areas in the rural interior of the Northern Cape, western Orange Free State and Eastern Cape where colored communities have average per capita incomes below the minimum living level.

It has been noted that the black population can be divided almost down the middle, into "insiders" - those who are employed in the formal sector at wages above the MLL and have access to formal housing and reasonably adequate health and educational facilities - and "outsiders", who live in poverty and have little or no access to these amenities. (See Map 58)

Indians are relatively affluent compared to blacks and coloreds, with per capita incomes of more than treble the MLL in most districts.

Violence

An estimated 42 000 children have lost an immediate family member through political violence in South Africa in recent years. In addition, in the Durban area, for example, 41% of youth have lost a friend through violence, and 46% have seen someone killed. A high proportion of children exposed to violence have long-term emotional problems such as anxiety, sleep disturbances, loss of appetite and an inability to concentrate, and 40% of 16- to 20-year-olds say they feel tense and nervous. This is especially true in KwaZulu/Natal where more than half of all politically related deaths have occurred.

After 1983, when a coalition of anti-apartheid groups initiated a campaign to render black areas ungovernable, there were numerous violent incidents within black schools and schooling was forcibly disrupted, often for months at a time and in many cases permanently, for tens of thousands of black children in the name of "Liberation before education". The result was the creation of what has been called a "lost generation" of alienated black youth who are illiterate or semi-literate and who have no marketable skills. They are the parents of tomorrow, and their children are likely to grow up in impoverished home environments not conducive to learning.

Health and nutrition

Up to a third of urban and half of rural black children are undernourished, and therefore a health and nutrition program is an essential component of most educare services for disadvantaged children.

Malnutrition is caused in many cases by respiratory and digestive tract infections, which are common among children in poor communities. Respiratory ailments are particularly prevalent in rural areas due to exposure to woodsmoke in poorly ventilated dwellings.

A high proportion of black children, especially in densely populated peri-urban and rural areas where clean water supplies and adequate sanitation are minimal, harbour one or more species of parasite, particularly bilharzia, roundworm and whipworm. There is evidence that parasite infections cause malabsorption of nutrients and loss of appetite and may also impair cognitive functioning. A commonly reported symptom is lassitude linked to a lack of both physical and mental activity. A recent study of 16 crèches in KwaZulu revealed that 93% of the children were infected with one or other parasite. Studies of parasite disease in Natal and the Eastern Transvaal have commonly found that 90% or more of children are infected, in most cases by two or more species.

However, reliable figures on the extent of the problem are largely unavailable because until recently the government treated health indicators such as nutritional deficiencies and infant mortality as classified information. Collection of data on these "politically sensitive" subjects was discouraged by withdrawal of government funding. Rural statistics are least reliable because most data are supplied by hospitals, which are not easily available to rural people.

Poor areas have a higher proportion of physical disabilities than wealthier urban communities because of inadequate ante- and post-natal care, birth complications and a dangerous environment. General ill health is highest among children of mothers who have less than Standard 5 (Grade 7) education.

The new government has assigned top priority to primary health care and instituted free health care for pregnant women and children under the age of six.

Number of school clinics per province

Eastern Cape	1,146
Northern Cape	267
Western Cape	828
Orange Free State	429

KwaZulu/Natal	640
Gauteng	758
Northern Transvaal	435
Eastern Transvaal	376
North West	333
TOTAL	5 212

Primary Schools Nutrition Program

In September 1994 the new government instituted the Primary Schools Nutrition Program for which it has budgeted R440 million countrywide in the first year. The scheme is administered by the provinces and varies slightly from region to region. Gauteng, for example, has targeted schools in farming areas initially. All primary school children in these schools are given a high-calorie early-morning snack before classes begin. The province intends to expand this program to schools in poor urban communities.

Water supply

The availability of clean water plays an important role in physical health. The table below shows that in four of the nine provinces the majority of black South Africans have no easy access to clean water.

No water in home or on plot as % of population				
	Coloreds	Blacks	Indians	Whites
Eastern Cape	3.2	67.1	-	0.1
Northern Cape	7	9.2	-	-
Western Cape	0.3	11.7	-	0.2
Orange Free State	-	39.2	-	0.2
KwaZulu/Natal	-	60.4	1.1	0.4
Gauteng	-	6.5	-	0.1
Northern Transvaal	-	67.5	-	-
Eastern Transvaal	-	37.8	-	1.3
North West	-	55.8	-	0.5

Economic inequality

The Education Atlas used three variables - the % of households below the poverty level, the unemployment rate for 1990 as compiled by the Development Bank of South Africa, and a dependency ratio based on the number of 0-19 year-olds plus those over 65 as a percentage of the total population - to compile an indicator of economic inequality (see Map 116). With few exceptions, areas in the "Very Badly Off" category are in the former homelands and TBVC states. Many rural areas in former "white" South Africa, including much of the Orange Free State and sections of the Eastern Cape, are in the "Badly Off" category, whereas the Western Cape and Gauteng are classified as "Well Off" or "Very Well Off."

Areas in need of urgent education assistance

Using four variables that are available for the entire country -the black pupil-teacher ratio, the

black pupil-classroom ratio, black secondary school enrolment as a percentage of total enrolment, and total black enrolment, the Education Atlas has compiled a map (see Map 117) showing areas requiring urgent education intervention. Areas of very high need are in the former Transkei and KwaZulu. Areas of high need include most of the rest of these two areas, the former homelands of KaNgwane and parts of KwaNdebele and Gazankulu, and parts of both rural and urban former "white" South Africa.

Implications for Early Child Development

If one wishes to identify the most disadvantaged communities in South Africa based on the foregoing, patterns emerge. In the top category for being worst off, are the Eastern Cape, KwaZulu-Natal and the Northern Transvaal, with the second category comprising Orange Free State and Eastern Transvaal. These are the provinces with the worse overall profiles in terms of quality of life and social development indicators: poverty levels, water supply and nutrition. When one takes additional data to look at per capita education expenditure levels, teacher/pupil ratios, concentrations of students in primary schools and primary school drop out rates, the provinces following a similar pattern, almost invariably. Although blacks are the most disadvantaged overall, there are pockets of poverty, illiteracy and poor health in many colored communities.

The data indicate the strong rationale for ECD activities, as an intervention to the high primary school drop-out rate, the high number of children out of school, and extensive health and nutrition problems among large numbers of the pre-school and primary school population. The data strongly indicates that ECD interventions must be directed as much to caregivers as to children, and must address illiteracy, low education levels and poor living conditions.

IV. THE CHANGING FACE OF THE MEDIA FOR ECD IN SOUTH AFRICA

Current provision of services

Forty-eight percent of the children under six live in urban areas and 52% live in rural areas. Only nine percent of these pre-school age children, or about 565,000 are in any form of early childhood development or pre-school education. Only 35% of this 9%, i.e. 3.2%, are in government-funded programs. Other programs are privately funded and are therefore available only to those who can afford to pay for them. In 1993 about 30% of white children under seven had access to some form of pre-school provision compared to 10.7% of black, colored and Indian children under seven. The overwhelming number of children in pre-school programs are white.

State provision for pre-school children in the past has been small; moreover, it has been allocated inversely to need. In 1990 total government expenditure on pre-school education was R130 million, i.e. 0.8% of the education budget. Of this, 69% was spent on white children. Government expenditure on each black child was only R38 per year compared to R752 per colored child, R118 per Indian child and R1 684 per white child. About 80% of operational costs of educare services for black children comes from school fees paid by their parents.

Research reveals that only 25% of African children who enter sub-standard A (1st grade)--the

first year of primary school, will make it to sub-standard B (2nd grade). Only 49% will make it to standard 5 (7th grade) within the normal years of primary school. In large part the children fail because without some form of pre-school education, they are not properly prepared for school.

The new government has ended the inequity of race-based funding, but will only this year control the budget. Redressing the inadequacies of present-day education provision, however, is a daunting challenge. Already, more than 22% of the national budget is devoted to education, and there is general agreement that education expansion will have to be financed through more efficient use of resources rather than additional funds. One way to spend the education budget more efficiently, educare professionals argue, is to invest more in ECD, as this will lower the costs of primary schooling by reducing dropout and repetition rates.

South African research demonstrates effect of ECD on primary school

There is evidence to support their argument. In the mid-1980s the Department of Education and Training developed a bridging program as part of the first year of school which was government-funded and which effectively provided a year and in some cases two years of pre-primary education for children who need it. By 1992 the program involved some 400 000 pupils in 1 230 schools, and the failure rate in the first year of primary school for these children was reduced from 21% to 3%.

The Centre for Education Policy Development, in a 1994 report sponsored by the World Bank, proposes that a year for 5-year-olds (known as the Reception Class) become a part of the ANC-recommended ten years of compulsory education, offered in both community-based and school-based settings. Basic costs would be borne by the state and augmented by the community, private business and/or parents. The report also proposes that the state subsidise ECD for underprivileged children under five.

It is unclear if provinces will implement this policy in the future. However, it is clear, in view of the overcrowding in primary schools experienced in many provinces in 1995, that the pre-school policy recommended by CEPD will face competing priorities. Therefore, for an estimated 94% of black pre-school children, radio and television may represent the sole link with pre-school education.

1994 figures per province excluding whites				
	Total 0-5	Children	% in	Educare
	Pop.	in Educare	Educare	Centers
Eastern Cape	955 158	137 378	8.71	2 572
Northern Cape	87 407	12 198	6.1247	
Western Cape	342 052	61 254	18.8 1	286
Orange Free State	331 861	21 418	6.4	469
KwaZulu/Natal	1 272 474	94 477	5.32 2	133
Gauteng	485 971	54 573	14.36	1 086
Northern Transvaal	977 333	119 298	10.48	1 465
Eastern Transvaal	434 868	40 252	8.32	826
Northwest	505 689	31 630	9.07	702

TOTAL	5 392 813	572 478	10.00	10 786
--------------	------------------	----------------	--------------	---------------

Teacher training and qualifications

In 1990/91 only four out of 100 teacher training colleges offered pre-primary training courses. In addition, four universities and three colleges in Natal offered tertiary pre-primary training. Eleven technical colleges (with entrance qualifications less than Standard 10) also offered pre-primary courses. Increasingly, the nonformal sector is taking responsibility for training those working in ECD. In 1993, of 9,224 people who received ECD training, 81% were trained in the nonformal sector.

Despite significant increases in training capacity in the past few years - the Orange Free State, for example, has doubled its training capacity since 1991 - many of the personnel providing education and care to young children are untrained (an estimated 12,000, or 71% of the teaching force, in 1991). Areas where access to resources and training are desperately needed include the Karoo, the Northern Cape, the Transkei and rural areas of the Transvaal and Orange Free State.

As South Africa does not have the resources to provide tertiary-level training to all teachers of pre-primary children, there is a need to offer both formal and nonformal training in an integrated and co-ordinated accreditation system.

Media could help fill the gap. According to the Human Sciences Research Council (HSRC), black households are tuned into radio for an average of nine hours per day; the television is on for five hours per day. But according to the HSRC report, the overall use of the two media does not involve children in any significant way.

The ability to use the media

The use of media such as radio for early child development is dependent on several factors.

Electricity

% Electrified homes by race group

	Blacks	Coloreds	Indians	Whites
Eastern Cape	19.6	78.8	-	100
Northern Cape	66.8	67.9	-	98.8
Western Cape	49.2	91.3	-	99.7
Orange Free State	48.7	-	-	99.7
KwaZulu/Natal	36.4	100	99	100
Gauteng	81	100	100	99.9
Northern Transvaal	20.5	-	-	100
Eastern Transvaal	33.8	-	-	100
North West	28.1	-	-	100

Black schools 1994

	Electrified	Not electrified	Total schools
Eastern Cape	341	4 965	5 306
Northern Cape	66	77	143
Western Cape	90	33	123
Orange Free State	554	2 287	2 841
KwaZulu/Natal	678	3 440	4 118
Gauteng	631	591	1 222
Northern Transvaal	399	3 278	3 677
Eastern Transvaal	335	1 304	1 639
North West	179	536	715
TOTAL	3 273	16 511	19 784

Radio and television

Because radios are cheaper to buy and easier to operate without electricity (car batteries are often used to power TVs in rural areas), many more South Africans own or have access to radio. However, more and more blacks are gaining access to TV.

About 60% of blacks in all provinces, of all age groups and in both urban and rural areas listen to some radio. TV viewing is far higher in urban areas (52%) than in rural areas or towns of fewer than 500 people (11%). Two-thirds of urban black youths have access to television, and they watch it twice as much as they listen to radio. Blacks in all age groups, all income groups and all provinces watch TV more than they read newspapers.

Radio in home as % of population

	Blacks	Coloreds	Indians	Whites
Eastern Cape	80.6	89.7	-	98.3
Northern Cape	78.9	88.4	-	98.7
Western Cape	83.5	83.4	-	98.5
Orange Free State	88.5	-	-	97.8
KwaZulu/Natal	85	97.3	95.8	97.8
Gauteng	86.4	91.5	97.2	97.5
Northern Transvaal	84.4	-	-	98.9
Eastern Transvaal	90.8	-	-	98.8
North West	81.1	-	-	99.1

TV in home as % of population

	Blacks	Coloreds	Indians	Whites
Eastern Cape	29.9	78.8	-	94.1
Northern Cape	48.7	66.2	-	95.2
Western Cape	57.2	83.9	-	96.9

Orange Free State	56.6	-	-	98.1	
KwaZulu/Natal	31.6	96.1	95.9	96.7	
Gauteng	69.9	94.0	98.3	95.7	
Northern Transvaal	28.8	-	-	97.9	
Eastern Transvaal	38.7	-	-	90.5	
North West	43.2	-	-	97.8	
None	17.9	44.6	95.4	100	
Some primary	29.1	61	93.9	95.6	
Level of education/TV in home as % of population					
		Blacks	Coloreds	Indians	Whites
Primary	44.7	82.7	97.3	99.1	
Some high	51.8	87.5	93.9	95.4	
Matric	70.9	97.5	97.7	95.6	
Technical diploma	88.4	100	99	98	
University degree	100	100	97.9	95.3	
Other post-matric	87.2	98.2	100	95.3	

Print media						
Readership as % of total population						
Note: E = English, A = Afrikaans, BI = Black (read predominantly by blacks whether in English or an African language)						
	Any E/A daily	Any E/A weekly	Any BI weekly	Any E/A mag	Any BI mag	
Eastern Cape	11.9	12.8	8.5	14.1	12.3	
Northern Cape	13.5	30.5	4.6	33.1	6.5	
Western Cape	36	49.6	2.8	49.9	6.3	
Orange Free State	17.5	17.7	12.1	21.4	20.4	
KwaZulu/Natal	14.4	17.2	24.1	16	13.1	
Gauteng	33	30.4	14	37	14	
Northern Transvaal	7.7	6	6	7.5	13.1	
Eastern Transvaal	11.2	11.1	8.5	17.4	20.3	
North West	12.8	12.8	9.2	13.6	18.2	

The role of NGOs in ECD

NGOs have been responsible for most of the dramatic growth in ECD provision over the past 20

years, and they have targeted isolated and marginalised communities in an attempt to redress the gaps and inequalities of the state education system.

They have identified needs; developed a variety of curriculum models based on local needs and resources; developed materials; provided training and support for operators of ECD programs and the communities in which they are located; and designed a system of accreditation for both ECD staff and facilities. This provides a substantial base from which ECD can be developed in the future.

All around the country NGOs are forming networks and associations to facilitate training, profit from bulk-buying schemes, reduce duplication of services, and share ideas and materials. In March 1994 a national ECD organisation, the South African Congress for Early Childhood Development, was established to influence policies to be implemented by the new democratic government.

In the past there was little collaboration between ECD NGOs and government, but this is changing now that the country has a democratic dispensation. The Centre for Education Policy Development argues that it is time to establish a partnership between NGOs, government, the private sector and communities to develop a support system for the health, nutrition, care and education of young children.

National Educare Forum

In 1991 the Independent Development Trust gave a one-off three-year grant of R70 million for ECD. The National Educare Forum (NEF) was established as a result of this grant, its aim being to help community-based ECD projects to become financially self-sustaining. By July 1993 some 1 203 projects serving 60 987 children (in most cases "the poorest of the poor") were receiving assistance from the NEF.

Other ECD funders

The corporate sector contributed R35 million to ECD in 1990, or 6% of its total contribution to education. Other funders include foundations, trade unions, international donor agencies and foreign governments (which allocated 2% of their total support of education, i.e. R11.6 million, to ECD in 1992).

V. LESSONS AND EXAMPLES OF VISUAL EDUCATIONAL MEDIA FROM OTHER COUNTRIES

We begin Section V by reviewing experience in educational media for young children and their adult caregivers from around the world. Most programs listed below show the relatively decreased effects of educational media when the programs are only targeted at children. When an adult learner is also targeted and has a well-defined role in the educational experience, the total effect on child development practice increases. The experiences with interactive radio in Bolivia showed how this worked and is now about to be tested in South Africa (further information on this is in the next section).

Research conducted in the U.S. on the effects of educational television is inconclusive. On the

one hand, it suggests that there is a slight correlation between heavy viewing of entertainment programming and poor reading skills (Palmer, 1988; Stromment & Revelle, 1991; Lovelace, 1991). On the other hand, there is strong evidence that some television viewing (between two and four hours for young children) is positively related to reading skills (eg. McFarland, 1991; Mielke, 1991). Specifically, children who watch television and become involved in books as a result, for example, through programs such as U.S. public television's Reading Rainbow and Ghostwriter, are more apt to become good readers (McFarland, 1992; Choat, 1986).

Positive impacts of television on children are well documented as well; however, just as possible negative effects of television are tied to program content that is specifically designed to serve children's educational needs. Positive outcomes are enhanced by a viewing context that includes adult intervention. Many of the researchers cited above contend that the detrimental outcome of television on children is directly related to whether the child watches television alone, or with a caring adult. It is apparent that when a child is accompanied by someone who can explain the events and their implications to reality, the child is able to learn a greater deal of information.

Educational television is an avenue being explored in South Africa. While it is quite costly and does not have the reach, it does offer the visual component. The University of Pretoria has created a special unit for electronic distance education. This system uses several video cameras, audio, mixing and processing equipment set up in an existing lecture hall. Video and audio signals are mixed in a control room under the direction of a producer. The images are then generated via microwave dish, optic or landline or satellite from one lecture hall to another where it is viewed on a large video screen or an ordinary monitor. One lecturer is then able to reach large numbers of students in different locations. In addition, the lecturer is able to get feedback from students in the distant locations via an audiosystem which uses an ordinary telephone. These students can also ask questions of the teachers the same as those in the room where the lecture originates.

ECD and television around the world

Television has also proven to be an instrumental tool in the development of underprivileged nations. Extensive studies conducted by Takahiro Akiyama (1986), and Eric Chevallier & Sylvie Mansosur (1993) gives detailed accounts of television programs in Asia that have rendered the positive results that television can be a great source of knowledge for both children and their caregivers. A brief description of the initiatives broadcasted in each Asian country follows.

Television in Asia

The Philippines, have one of the most successful children's programs in the country named "Batibot." The program includes music, simple animation, live action, and puppets. "Batibot" started as a co-production of the Children's Television Workshop (producers of Sesame Street) and the Philippines Government. In the Philippines, some 200 hours are allocated annually to educational programs for children.

In Indonesia, 23% of total programming is devoted to "educational programs," which include children's programs. Most of these, however, are not local productions. Local children's programs do not seem to be popular among children. A survey conducted by the Indonesian Child Welfare Foundation, revealed that out of 10 favorite programs for children, only one was produced in Indonesia.

Malaysia, the government-run station Radio-Televisyen Malaysia (RTM) broadcasts about 52 hours of educational broadcasts for children a year. TV3, the private station, broadcasts considerably less children's programs.

Japan's public broadcasting network, NHK, is the major broadcaster of children's program in Asia. It produces a whole range of programs for children of various age groups. About 30 hours per week of animated cartoons are broadcasted, as well as about 30 hours of educational program. In addition, the commercial stations also produce their own children's programs, mostly animated cartoons. An interesting point is that many Japanese cartoons and monster dramas have been exported to other Asian countries, where they enjoy great popularity and often come in for criticism for their possible negative influence on children owing to what is perceived as excessive violence in these productions (Akiyama, 1986).

China's Central Television (CCTV) broadcasts three hours of children's program daily. Half the time is devoted to cartoons from the United States and Japan and half to a magazine program.

Korea's two major networks, Korean Broadcasting System (KBS) and Munhwa Broadcasting Corporation (MBC), have children's program. Both air a six day 20-minute magazine format show for preschoolers. KBS' three channels also carry educational/instructional and cultural programs, much of which is targeted at children and youth. MBC also has a number of cultural/educational programs for children and youth.

The Singapore Broadcasting Corporation's (SBC) broadcasts about 100 hours of children's programs annually. The most popular is probably AAKsi Mat Yoyo which has been running since 1982. The program, Malay, is targeted for 5-12 year olds and features quizzes, song and dance, and information segments and is hosted by two children in cat costumes. SBC also runs daily children's cartoon. In addition, SBC airs the educational programs developed by the Curriculum Development Institute of Singapore to support the programs in the school system.

In Thailand, the stations allocate about 16 and a half hours monthly for educational children's programs. These programs include imported cartoons from the United States and Japan, audience participation shows, and Japanese educational programs dubbed in Thailand. The Thai TV industry is a dual system in which media corporations and advertisers operate under legal state ownership. In this system, the state must struggle to maintain its political control vis-à-vis commercial control from the direct owner of the station. Children's programs are probably the worst effected by this system.

India's Doordarshan allocates 120 hours a year to programs for children and youth. These consist of both enrichment-type programs and syllabus-based programs covering regional languages, sciences, and community living.

Pakistan Television Corporation (PTV) allocates a little over 2.5% of its total transmission time (about 50 hours a week) to children's programs. The programs are aimed at developing moral and social values in children and consist of music and songs, audience participation games, and cultural performances.

The National Broadcasting Authority in Bangladesh allocates 37 hours a year to educational programs for children and youth . Programs include song and dance recitals, dramas, traditional stories, audience participation shows, and a fortnightly magazine program.

In Sri Lanka, children's programs receive the second highest allocation of broadcast time after news, on Rupavahini, the government television corporation. In 1990, this was about 256 hours (Chevallier & Mansosur, 1993).

Television and research in the United States and Brazil

Other models of television shows which were designed to have a positive effect are displayed in some of the programs that take place in the rural areas of the United States. Although one tends to believe that the rural areas of America are vastly different from those in developing countries, the fact is that some of the same educational and social disadvantages occur. Steps have been taken to decrease the inclination of this occurrence that often leaves children of rural areas less advantaged as their urban counterparts.

HOPE is a program in rural, lower-middle class West Virginia where 600 children and their parents were studied. The program was designed to prepare preschool children for school by increasing verbal interaction in the classroom and reducing extreme shyness, improve early school failure and grade retention, and decrease poor performance on achievement tests.

HOPE had three parts that included daily television lessons and follow-up home activities for 3-5 year olds, with a parent guide so parents would know what the child was learning from the television. Weekly home visits were made by local trained paraprofessionals who gave instruction on how to teach parents how to teach their children. Lastly, weekly half-day group experiences in a mobile classroom with a certified teacher and aid was provided.

The television show, "Around the Bend," incorporated within the HOPE program, main goal was to provide experiences to promote children's cognitive development. A central character, Miss Patty, served as a positive role model. Results of the study showed that 80% of the parents watched with their children and facilitated the learning experience. Home visitors were provided with continuous in-service training and the classroom on wheels gave each child 8 classed per session, with 15 children. Findings, (e.g. Chevallier & Mansosur, 1993; Choat, 1986) also suggest that the program was able to reinforce development activities provided by the television, it gave children the opportunity to socialize in groups, and potential separation anxiety was greatly reduced upon entrance into school.

In another example, El Arco Iris is a supplementary pre-school program for Hispanic 4- and 5-year-old children and their parents. El Arco Iris aims to upgrade the entrance level readiness skills of children whose performance might be inhibited by language difficulties. Twice weekly parents and their children attend 90-minute sessions that include a television presentation in which a story is read and major concepts presented. Bilingual teachers present the television lesson, which contains footage of locations in the community. Paraprofessional aides provide further instruction, show parents how to complete activities at home, and emphasize learning with children. Evaluation studies conducted by the Brownsville, Texas Independent School

District show positive gains in language for participants from parents, schools, and teachers. In all of these examples, the role of the adult was heavily emphasized.

In today's world, mass media in general and television in particular are increasingly influential in the socialization of the upcoming generations. The seductiveness of television makes it a key socializing agent, especially for children from disadvantaged backgrounds who have no access to other cultural commodities or recreational facilities, and who are more or less left to their own devices by parents unable to cope with their problems. These are some of the serious problems that face countries like Brazil (Chevallier & Mansosur, 1993).

Television is such a dominant force in Brazilian culture that the television seems to be a "school outside school" attended by practically all of the country's young people irrespective of age and social class. For some, it is the only school they know.

The fragile condition of Brazilian education is of prime importance when implementing a television program for children. Brazil, with its material poverty, very short school days and poorly paid, insufficiently trained teachers only compounds their problems. With all of these difficulties, schools have now been given another mission: education in the mass media. Realizing this mission, an innovative experiment was conducted to promote education through the use of television.

The overall objective of the experiment was to teach children and adolescents to use television actively and critically. The educational principal of the program predicated the integration of the mass media in the school room, both as objects to be studied and as educational tools. The aim was to connect up previously conflicting discourses, as the only way of securing a unified socialization process and one that was adapted to present and future needs.

Results showed that the objectives of introducing children and adolescents to the conscious perception and critical discussion of televised messages gave them knowledge of the technical aspects of the production and transmission of messages. Survey's conducted by Edward Palmer (1988) and Sachiko Kodaria (1991) indicated that children received an understanding of the different types of shows and of the organization of scheduling. They also gained the ability to distinguish between real and fictional elements within messages, and was aware of the different ways in which televised messages influence feelings, values, self image, opinions, and behaviors. A perception of the different ways in which social, economic and political events were presented and learned.

Involving parents through multi-media

Another initiative undertaken in promoting early child development was started by the Educational Television Intervention Programs Project (ETIPS) of Tennessee Technological University in Cookeville, Tennessee. Acknowledging that parents are the major resource to the holistic development of their children, ETIPS developed and field tested a supplementary model for early intervention in rural isolated regions.

The major goal of the ETIPS has been to develop parents as a resource in their children's education by showing them how they could be effective at early intervention if good examples

and techniques were demonstrated. Findings indicated that parents are receptive to ideas modeled by other parents; television instruction, when accompanied by print materials as a follow-up to viewing, is an effective means for assisting parents; parents are effective trainers of other parents; public television stations and early intervention service providers can team up to provide training and contact with rural isolated families of young handicapped or at-risk children.

The major products of the ETIPS model include 30 fifteen-minute videos of skills that infants and toddlers typically develop between birth and three years of age, including gross and fine motor, language, and cognitive skills. The 30 programs illustrate each skill and show parents teaching typically developing and handicapped/high risk infants and toddlers. The thirty programs in the video series are called "Stepping Stones: Pathways to Early Development."

A parent guide accompanies each video. The guides are four parts each and are designed to compliment each program by defining the skill, telling why it is important for the child to develop, describing how the skill occurs, teaching techniques at home, and making homemade materials. Follow-up materials help reinforce what was seen in each program.

A child progress chart is also provided for parents to document their child's progress. the chart divides each skill into four or five sub-components of each skill (the sequence is and described in the video segment). Parents can then take their child through each stage of the skill and document the child's achievement.

Parents have found the print materials to be valuable tools in assisting them with teaching their child. They were evaluated generally as informative, clear, easily readable and helped them remember what was seen in each video.

A user's guide was developed for service providers and other professional who would be using the series. The guide contains relevant information concerning the background material for the scope, nature, and rationale for the ETIPS model and products. Strategies for assisting parents in rural areas are suggested. The ideas that public television can be used as a vehicle for assisting in early intervention are also discussed. Strategies used is the ETIPS model were described and accompanied by a user's guide. The guide is designed as a flexible tool for service providers to use within their own programs and serves as a resource.

Linking and Networking with Public Television - a major component of the ETIPS model is the linking of service providers with public television. The majority of public television stations are interested in providing quality programming to the viewership in the broadcast regions. WCTE-TV, a public television station serving the UPPER Cumberland Region of Middle Tennessee, assisted with the development of the thirty videos in the Stepping Stones series. They also broadcasted the series so that families with young at-risk or handicapped infants and toddlers could view the thirty programs. This was implemented to test out the ETIPS model and also have parents and professional evaluate the videos and accompanying print materials.

The effects on learning

There is considerable research that dicusses the effects that television as a tool of learning may have on infants and toddlers (e.g. Chevallier & Mansosur, 1993; Choat, 1986; DUBY, 1988; Folio

& Richey, 1987; Liddell, 1988; Lovelace, 1991; McFarland, 1992; Palmer, 1988; Strommen & Revelle, 1991). Eric Choat (1986) suggests that children at that age may not be cognitively developed to gain any redeeming value from aired programs. The following study presents a slightly different view and suggest that television may have educational qualities for very young children: The Study Group on TV programs for Two-year-olds has been engaged since 1979 mainly interest-producing and evaluating TV programs for very young children. According to the NHK Public Opinion Research Institute's survey in 1980 for Japan, the average daily TV viewing time of two-year-olds are at a crucial development stage, when they develop imitative behavior and the foundation for imaginative power and concept formation. Therefore, the proper use of television can be extremely meaningful.

It was found that the children's attentiveness rate rose for scenes in which human beings or animals appeared, those in which there was no movement of the camera but active movement by characters, and those in which some counting of things took place.

In the group's second study, several variations were produced of a segment in which three things were counted, since the attentiveness rate for this had been high in the first study. It was clarified that what attracted the children's attention was the action itself of counting things, rather than the composition of the images projected, the kinds of objects shown on the screen (e.g. toys, food) or the accompanying humorous conversations.

In the third group study, attentiveness rates and imitative actions were checked with regard to short segments on "tooth-brushing," "work," and "picture-drawing songs." (The results showed some differences by sex in imitative actions and the attentiveness rate for the segment about Awork). In the case of the youngest children, the attentiveness rate was high for segments which were short, containing simple pictures with quick movements, and accompanied by easy-to-understand narration.

In concluding this section of television, it should be mentioned that although we see a positive correlation between caregivers, television usage, and actual child development, studies show that in settings where television is used as a learning tool for nursery school and infant children, the teachers must be mediators between children and educational television broadcasts to make the experience meaningful. A more ideal situation would be the use of video recordings that can be suited to children's needs and used to supplement classroom activities. Teachers should evaluate whether they are providing adequately for children's needs with their use of educational television.

Video as a training tool

Although videos will never replace the virtues of face-to-face communication for effective training, the proper use of videos can excite and initiate involvement in education. This is mainly because TV "language" is pervasively present in the lives of children but also because its use at school futures communication between teachers and pupils.

Because videos have an entertaining element, it is more likely to appeal to several age groups and create interest in the topic of discussion. The use of videos over other training materials may be its dual advantage of reaching the eyes and ears. Previous studies (e.g. Choat, 1986) indicate that

viewers are able to retain a message more easily when more than one sense is involved. Unlike role plays, video can be seen more than once, thus allowing easy access to continued learning through repeated usage. Through this method, important skills and information can be reinforced, and new issues can be discovered for inquiry.

The key to an effective video is to design one that is directly relevant to the viewers' problems, priorities, experiences, and feelings. Video can be an appropriate communication tool for a diversity of programs, people, and cultures. All video information is more effective when accompanied by a set of supporting materials and techniques for facilitation.

There are examples of the positive use of video around the world. The creative use of video is recognized in the early child health and education project that is in Thailand. The impact of a series of five interactive nutrition and education video programs and the provision of a food supplement was studied in 12 villages in northeastern Thailand. Each interactive video tape is 25-30 minutes long with 8-10 interactions the group practices for another 15 minutes each. The tapes cover several topics: Luk-Rak (beloved Child and the name of the supplementary food product) compares the food and maternal behavior around two 15 month old boys--one malnourished, one normal. The value of Breastfeeding is also explained in the attempts to promote natural health practices for children and parents.

Another innovative program was developed by the Ministry of Health in Thailand to reduce the level of protein energy malnutrition in infants and preschool children. Due to the inadequate coverage of the health system and the lack of community awareness of the problem, studies showed that, by themselves, income-generating projects did not necessarily have an impact on the problem.

To this end, the Institute of Nutrition at Mahidol University carried out a nutrition education project that was directed toward families with the most vulnerable infants and pre-schoolers. An important part of the nutrition education was a focus on caregivers and children interactions and improving the physical and social environment surrounding the child. Some traditional but negative attitudes and practices towards interactions with children were found among the majority of caregivers, which was aiding in the poor environment. With these practices in mind, a series of five interactive videos were created. One of the five was specifically orientated toward child development, aimed at recognizing the importance of play and of mother-child interaction in that play and in supplementary feeding. A second video compared two 15-month-old boys, one malnourished, the other normal, identifying behavioral as well as nutritional differences. Health communicators in each village, who served as distributors of supplementary food, were trained in the use of the video which were presented several times in each village.

The choice of media also made a difference. In a controlled study comparing the effectiveness of health education using just video, video and a radio spot, just radio, and nothing, The Institute for Nutrition research at Mahidol University found that village mothers exposed to video or video and radio were significantly more knowledgeable and provided better nutrition to their 0-4 aged children. The video groups has improved interaction between mother and child and an enriched environment for young children--both targets of VTR-4. Overall results of the program show that mothers were more receptive to engaging in interaction with their children, became more

knowledgeable about the health of their young child, and indicated that the videos gave them better attitudes about the several different elements of child rearing.

Studies (e.g. DUBY, 1988; EVANS, 1993; FOLIO & RICHEY, 1987; LIDDELL, 1988) show that with existing communication technology, using visual and audio messages can result in behavioral change, regardless of literacy levels or remoteness. The integration of psycho-social components into nutrition education presented in the form of interactive video has had a promising impact on rural mothers' knowledge, attitudes, and child rearing practice. In each case, by increasing maternal awareness, the naturally existing mother-infant relationship is enhanced.

There are several attempts being made to become involved in the ever-growing process of interactive uses of video education. Some organizations use videos to record their own behaviors for later assessment, while others have a specific plan of action to involve community via the activity of making a video.

Anau Ako Pasifiks works to ensure that the pathways of learning for young Pacific Islands children take into account their strengths and differing abilities that stem from their cultural backgrounds. In May 1993, they decided to make a video about their work. They intended to use it as part of the project's training and also to disseminate the principles and practices of the project to communities, training establishments, and policy making groups at Ministerial level. The proposed contents would include the history of the project, its objectives and the way it operates, the roles of the people involved, and a look at future developments.

It is apparent that the uses of video to promote early child education are both practical and effective. Video offers several opportunities to solidify learning through constant review and analysis. We have found that video education as an important tool in interactive media for the continued development of children, parents and caregivers around the world.

VI. DISTANCE EDUCATION AND INTERACTIVE RADIO INSTRUCTION FOR ECD

Distance education and the use of radio for early child development has occurred in various forms around the world. Most radio programs working in this field have been for social marketing purposes (immunization, health practices) or have been talk-style programs directed only at adults.

Some research has been conducted. In an effort to analyze the international broadcasting community, a worldwide survey of 48 countries was conducted by Sachiko Kodaria (1989). Results of the research suggest that the use of technology for distance learning has developed educational opportunities for increased international awareness and cooperation. The most pervasive beliefs among educators in this analysis find that the main functions of educational broadcastings in their countries was its ability to supplement education at school. The second important function of radio education was its uses for "modernizing the content of educational materials and/or developing new instructional methods." Lastly, there was international consensus that a third function was increased access to new information useful in education and the radios' ability to supplement the number of qualified teachers, professors, and educational

materials in short supply. These applied to both primary school and a pre-school model (not ECD below the pre-school age). The results of the survey reiterate the importance of radio in educational broadcasting.

While little research has looked specifically at the area of pre-school education, a survey in Bolivia was conducted to assess pre-school children's general use of radio and television, in order to achieve some perspectives on the prominence of pre-school educational programs in their daily listening routines. A home questionnaire study focused on the estimated 96% of black pre-school children who reared at home (Ras and Boraine, 1986) in these areas. For such children, radio and television often presented the sole link with formal pre-school education.

Ras and Boraine (1986) study also gave evidence that the study displayed that both radio and television represented heavily-used media. In the households containing only a radio, its use was averaged at approximately 9 hours per day. For households only with televisions, it was in use for 5 hours per day. These figures are considerably less than the average findings of North American households that have a preschool child (Winick and Winick, 1979); a difference largely attributable to a shorter broadcasting day.

The survey also indicated that education for caregivers was also recommended as a means of encouraging children's focused participation in pre-school education programs. Although many caregivers liked children to listen to/watch pre-school education programs, (75% preferred radio programs, while 56% preferred television), the study suggested that caretakers were not active facilitators in helping the children while they were watching/listening to the programs. However, although it must be stressed that caregiver reports do not necessarily reflect their attitudes to the actual utilization of media by children, several reports (e.g. Liddell, 1988; Lovelace, 1991; McFarland, 1992; Palmer, 1988; Strommen & Revelle 1991; Choat, 1986; Gettas, 1991) emphasize that children learn at greater levels when they are accompanied by an active and participating adult.

Background on IRI

Interactive Radio Instruction (IRI) programs have been developed to improve learning for many different subjects and many different audiences for formal and nonformal education over the past 20 years. IRI gained worldwide attention as a means of improving learners' academic achievement and providing access to learners who otherwise do not have schools or well-trained teachers. IRI reaches schools and nonformal learning centers in Central and South America, in Africa and in Asia.

The original methodology was developed in 1974 to teach mathematics in primary schools in Nicaragua. The methodology promoted active learning through a conversation between the students and the radio teacher. Interactivity in this case meant the radio instructor would ask a question and leave pauses for learner responses. This rendition of Radio Math became a IRI prototype and has been adapted to suit schools in El Salvador, Bolivia and Thailand.

IRI methodology was then used to develop English as a Second Language in Kenya and an entire series of basic education courses for children who had no teachers in rural areas of the Dominican Republic. Evaluations showed that children learning from just five hours of interactive radio instruction per week did as well as students in conventional schools in math

who did not use the IRI programs and almost as well in reading. Using a medium like radio allowed the programs to reach children and teachers who might have few opportunities for education. Results were similar: achievement went up and new populations of learners were served.

A version of IRI math was also created in Honduras to be more relevant to the learner by using situations and resources within their own environment. This model used stories and characters familiar to daily life. Math problems could be developed in an imaginary market setting, for example. This version was called mental math.

Experimentation in subjects such as science, health, environmental education, early child development and adult literacy has resulted in new methods of interactivity and new ways to involve the teacher and improve the learning environment. Definitions of interactivity and active learning no longer stop at a conversation between the radio teacher and student.

Over the past decade, interactive radio instruction has emphasized a more multi-channel approach where the radio and worksheets are never intended to be the sole source of learning. In Costa Rica, where IRI methodology is being used to teach environmental education in formal schools, the soap opera format, particularly popular in Latin America, engages the students in a story. Each child becomes an Econaut, active in the quest to save the planet. Learning takes place between students, the teacher, the community, and imaginary ideas.

In Honduras, IRI methodology is being used to teach basic education to adult learners in nonformal literacy centers. The adults find the programs relevant enough to their lives to visit regularly while the programs are aired. Similar to school-age learners, they respond verbally as the interactive methodology involves them and work together.

In Bolivia, Radio Health programs teach practical health information and incorporate a child-to-child methodology into the learning process. As children learn, they practice and teach health information to their siblings.

IRI methodology is being used to teach adult caregivers how to stimulate young children in early child development programs in Spanish and in Quechua. The programs actively engage the children and show the adults how to organize their site, provide a stimulating and healthy environment, and prepare them for primary school. Success in these programs is based on the transference of skills and positive interactions between caregiver and children when the programs are not being aired.

Radio Science in Papua New Guinea encourages hands-on experimentation. The teacher prepares and guides the activities so that the learners have multiple channels for learning. Students interact with the radio teacher, the classroom teacher, with their fellow students and the materials to learn about natural phenomena.

In South Africa, new types of interactivity are being developed which help to empower the teacher and teach two levels of English instruction through Olset's programs English in Action. These programs, which also received USAID-funding and technical assistance from LearnTech, are now being aired through the SABC in certain experimental regions.

In many other countries, support has been given to improve educational media to allow teachers to encourage more positive participation in the classroom or center of learning and focus on learning. Programs in Bangladesh, Venezuela, Indonesia, Lesotho, Uganda, Cape Verde, Fiji, and others have received technical assistance to use more multi-channel approaches to increase their educational access, and improve their learning environment.

IRI and ECD experiences

The first model of IRI for ECD was developed in Bolivia with funding from USAID through the LearnTech project. In March 1993, a Bolivian organization named ONAMFA and the LearnTech project agreed to experiment with ways to engage young children in active play, train caregivers and stimulate early learning activities through IRI methodology. An extensive audience profile was conducted. While the situation was ripe for a positive early child development experience, the caregivers did not know what to do. Despite low literacy skills, little experience learning from the formal media or books, and little concrete knowledge of child development practice, the caregivers wanted to learn and be professional in their capacity as education and care providers, but they felt that the knowledge was beyond their reach.

The ONAMFA training staff also recognized they needed tools that were not based on reading skills and which could help them reach a large and often remote audience. The ECD system was growing so quickly that the ONAMFA staff was finding it impossible to provide hands-on instruction to the growing number of caregivers and to provide information to parents and others who were at a distance.

Using IRI methodology to engage children and foster early child development skills in caregivers in poor regions made sense for many reasons:

Low literacy skills among women caregivers. Literacy skills of poor women caregivers are consistently low. But people do not need to read to learn. Using an audio medium such as radio or audio-cassette gives listeners the option of learning by making the information accessible. Knowledge is presented through a realistic learning channel which is useful and digestible.

Active learning techniques can be modeled and practiced. It is not an uncommon sight to walk into a childcare facility and see children doing almost nothing. IRI offers the possibility of demonstrating active learning techniques and showing the caregivers how to use simple organizational techniques, games, songs and other the environment to create a vital early child development setting.

Both adults and children can be reached. ECD IRI programs are created for two audiences at once: adult learners and young children. By engaging children in age appropriate activities, asking the adult caregivers to serve as the guides and then stating explicitly why these activities are educational and easy to adapt, both audiences are involved and learning actively. It is at once a children's educational program and a training tool for the adult caregivers.

Early child development practice can be brought down to earth. Typical reactions to learning early child development theory and practice include: *the information is too conceptual, I*

don't know how to apply it and I didn't know I was doing so much of it already. In either case, it can be difficult for caregivers and parents to bridge the gap between conceptual information about early child development and what to actually do. IRI provides the opportunity to connect games and activities with early child development theory. Conceptual information is put into perspective: It is only useful when it can be learned and used. To be learned, it must be connected to activities and experiences in the pidi. IRI helps that process along.

Cultural and oral traditions can be reinforced. By using culture, radio characters and stories, IRI programs invite participation and learning. Because an audio program can create any environment, it builds on the power of the imagination and the creativity of the scriptwriters. The children can learn through seeing, hearing, touching and interacting with each other and resources already present in the environment. Extra expensive resources are not necessary.

Teaching and learning can be incorporated into the daily routine. The programs serve as a practical training tool for caregivers to use with the children during their day. It makes their day easier and, importantly, does not require additional time as learning is incorporated into the system.

Quality can be controlled. Because each program can be tested and retested before it is finalized, quality can be controlled. This can be a great support to outside trainers, national or community programs, and caregivers and parents. The program can also be fine-tuned to be consistent with other guidelines, such as the training guidelines used by Onamfa.

Radio is accessible to nearly everyone.

IRI can practice what it preaches. Rather than tell caregivers how to provide developmentally appropriate environment for children or write about activities for children, IRI does it with them. It models real activities for caregivers and children and points out their characteristics. For proponents of active learning principles, IRI provides the opportunity to practice what it preaches. (*excerpted from case study 4, LearnTech*)

Why It Works

Summative and formative evaluations show the programs are effective in several ways. First, through the interactive radio instruction methodology, the caregivers and children are learning how to interact and set up stimulating environments for learning and growth. Second, they are learning that good early child development is not just about reading and counting, but is about learning how to become a well-balanced person who can make sense and feel confident in what will sometimes be a confusing world. caregivers are learning that they do need to be highly educated to understand good early child development.

The success of the Bolivian IRI programs *Jugando en el Pidi* is also attributable to the working style of the team. From the beginning all members of the design team went out to the centers to observe interactions between children and caregivers and ask for feedback. Government staff donated hours of their time a week to ensure that the programs were fitting in with their training plan and were teaching the kinds of information they found to be necessary. Once a week the evaluation specialist, the scriptwriter, and two early child development advisors met to review

each script in detail and share suggestions. This process was lengthier, perhaps, than a less participatory process, but the resulting scripts were far superior due to the process.

The participating caregivers contributed significantly to the process because they saw it as beneficial to the children in their pidis and to their own professional growth. Specifically, they learned,

- 1) To value the games and give them the importance they have during work with children.
- 2) To promote active learning among the children through simple and developmentally diverse activities.
- 3) To feel like professionals and not simply childminders, that is, to re-evaluate their own work as women contributing to the development of the community.

Finally, the programs work because they were tested, retested and retested. Fifty-five caregivers and 285 children listened to the tapes, used the posters and sometimes used the guidebooks over six months. Feedback was solicited from caregivers, parents, regional teams, the national team, and external evaluators. Within the design team, we brainstormed, we assessed, we complained and we negotiated. When we had to, we threw away our adult ideas of what interests children and we went back to the centers to observe.

Today, the experimental IRI programs have been translated and adapted in Quechua, an indigenous Indian language, with the help of UNICEF and a team of specialists. It will soon be adapted in Aymara with help from Plan Internacional for similar purposes. The Spanish version has also become part of the national curriculum for early child development through the division of PIDI (Programa Integrado de Desarrollo Infantil) at the government level.

All of these programs rely heavily on formative evaluation in the communities and with the learners.

VII. THE CHANGING FACE OF THE MEDIA FOR ECD IN SOUTH AFRICA

One goal of educational media is to bring education to people, young and old who might not otherwise get it due to the inaccessibility of conventional classroom education. In some instances, educational through both print and broadcasting such as correspondence courses, radio, television, video or audio tapes is combined with classroom, training at educare centers or other face-to-face instruction.

In some countries, the media is used as a tool of basic education--teaching the fundamentals of reading, writing and arithmetic. In other places it is used more creatively to teach language skills, basic health care or cultural information. Here in South Africa it can be used to do both.

In either method, educational media is an essential element in bringing education to poor

communities that might ordinarily not have access to formal education in general and early childhood development in particular. This is critically important in South Africa since about half of the population, including pre-school age children, live in rural areas which often do not have basic education facilities or trained teachers and only 8% are reached through traditional training mechanisms.

In South Africa, there are already organisations in place committed to bringing quality education to more people using this strategy. Among them are Open Learning Systems Education Trust (OLSET), the University of South Africa (UNISA), Technikon RSA, Technisa and commercial colleges such as Damelin. The South African Institute for Distance Education (SAIDE) says its goal as removing unnecessary restrictions on educational opportunity so that all people can have maximum access to learning and knowledge, when and where they need it. The organization hopes to "liberate the existing education system from ritualised, expensive and uneducational rigidities."

Distance education at its best is a form of open learning, available to everyone. That is essential to the building of a viable education system in the new, democratic South Africa. By using various technologies and media, it is a way of "leapfrogging" over existing problems to solutions to the myriad problems facing education here.

South Africa has a long history of correspondence education. But the previous approaches have had their limitations, none were directed toward children, few incorporated principles of interactivity and learning theory and not much was available to further the education of those in the field of early childhood development. The tradition of correspondence education has not included active student support systems. However, much of the vital infrastructure for distance education is in place, such as a good radio and television broadcasting network as well as community-based organizations that can be used to get information to the target groups.

According to the experts at SAIDE, distance education should include a combination of print, broadcasting and face-to-face education because these elements reinforce each other. SAIDE cites research that indicates students benefit if more than one single method or medium is used. Multi-media courses have resulted in the greatest success. Despite the costs, satellite and computer links should not be ruled out as they are also quite effective. There are different costs and organisational components but used in tandem allow for economies of scale adding to savings that make distance education economically attractive.

Studies have shown that computers can be quite effective, especially when it comes to training teachers. Computer-managed instruction provides a private non-threatening way of learning because it minimises the embarrassment of different ability levels in the same class.

When considering the strategies of media-based education, it is important to train staff who are able to combine teaching, administrative and curriculum design skills in ways that are different from classroom education.

The SABC

SABC, the state radio and television network, was in fact a mouthpiece of the apartheid government. During the anti-apartheid struggle, many South Africans were focused on

countering the influence of the SABC. Very few people were able to gain first hand radio or television experience.

While radio is virtually ubiquitous, TV has a much smaller penetration in the South African population and as the demographic information in this report suggests, is concentrated among the white more affluence populations. The absence of media training as well as inappropriate materials for South Africa has resulted in teachers and students having a very negative attitude toward electronic media in formal education and it is sometimes perceived as a poor alternative to Areal education. Both the education system and the broadcast system were discredited over the years along with the system of apartheid.

Currently, the SABC is in the process of transforming itself and questions of what role the network will play in restructuring education is one important area presently under discussion. Policies are being formulated and there may be some clear direction this year. At the present time, despite its vast resources, SABC provides a limited educational service, in part the result of little meaningful consultation between SABC and the educational agencies it says it intends to serve.

There are few pre-school education programs on radio and television in South Africa. In urban and peri-urban areas, 50% of the children in households with radio listen to educational programs, 46% in households with television tune in. According to caregivers answering questionnaires, pre-school education programs on radio are ranked as the most popular during the mornings. On television pre-school education programs are the second-most popular for television in the afternoon. However, half of the children sampled did not listen to or watch pre-school education programs at all which leaves considerable scope for expanding the audience.

A review of one of the main SABC productions from pre-schoolers "Kideo," which has been on the air for 4 years, by a South African analyst who is a producer, researcher, and formerly employed by SABC is as follows: the program is limited in outreach because it is broadcast in English only; there is no input from organizations working with children; some of the programs reinforce stereotypes about gender and class that are not progressive. Favorable observations were that the pace was slow enough for assimilation by children, there was no violence and strong reinforcement of positive values for children.

The unbundling of SABC is expected to create opportunities for new commercial broadcasters in South Africa who should also play a role in education in general and early child education in particular.

When considering the different types of venues which can be used to distribute information and educational programming for early child development, public broadcasting through radio commands center stage. South Africa has the basic infrastructure to support this.

There are no hard and fast timetables for SABC's transformation. The body entrusted with reallocation of the broadcast spectrum, the Independent Broadcast Authority, is currently conducting a "triple inquiry" into issues concerning public broadcasting, cross ownership of media and whether stations would be required to broadcast local material. Only as these inquiries are completed will final decisions be made on granting licenses. At present, only licenses for

community radio stations are under consideration, but temporary commercial licenses might be granted near the end of the year.

Paul Liebetrau of the SABC spoke at the February LearnTech workshop and was not initially optimistic in response to ECD and media workers inquiries into possible SABC distribution of ECD programming. Currently, he has expressed renewed interest and is exploring the possibilities of opening up the SABC to ECD programs of high quality.

Through initiative and persistence, some ECD workers at the workshop have met with success as follows:

- Ntataise and Kgutlo Tharo, two ECD organisations in the Free State, are hosting programs for parents with young children on the Sesotho Stereo women's programs every second Tuesday afternoon.
- Radio Ciskei has been supportive of radio outreach to young children and parents; it provides the Community Child Development Centre of East London with an hour every Wednesday in the community program slot. Research shows that people are listening and learning from the program. At least one pre-school has opened as a result of the broadcasts, and this school approached CCDC for training its teachers.
- Workshop attendee Dudu Majola reported that trainers at TREE Pietermaritzburg approached the new community radio station, Radio Maritzburg when it went on the air in March 1995 and have agreed to a daily 15-minute program aimed at children and parents.
- Thoko Khoza of Mashambane ELC, a member of the Small Beginnings ECD groups has been broadcasting on Radio Swazi since late 1993. She broadcasts in Zulu, which is close to Siswati, for 15 minutes every Monday afternoon at 14h00 on the women's program, about matters that concern mothers, childminders and educare workers.

Apart from these notable examples, very few crèches make use of educational media to date. However, there is great potential, particularly among the community radio systems. Research shows significant improvements in school readiness for crèche children who were exposed to just 40 minutes of educational television per day. The majority of black pre-school facilities are staff by untrained personnel and South Africans interviewed suggested that utilizing pre-school educational programs on radio and television in crèches could make a significant improvement and could support the hard work of the trainers and caregivers.

The majority of black children attend crèche or nursery while their parents work, so most of them are away from home for a full day. If pre-school education programs are not broadcast in the crèche or nursery than the majority of children may have virtually no access to these programs since few of them are broadcast on weekends. It was also expressed that scheduling pre-school programs on the weekend should also be considered.

Several foreign children's television shows are also coming into South Africa. *Barney*, a popular U.S. program has already shown popularity in South Africa. The Children's Television Workshop (CTW), the producers of *Sesame Street*, has co-produced 13 foreign language versions of the series with foreign broadcasters. All borrow some elements from the American series but each co-production is designed to meet a unique set of educational goals. Each coproduction has its own set, scripts, casts, puppets, animation segments and live-action films.

Community Radio

Community radio in particular is suited to address the needs of early child development. AS the Independent Broadcasting Agency distributes licenses, the potential for more and more localized programs in local languages to be aired also grows.

By its nature, community radio is small and based within the community, staffed by people known to the community. Educare workers once trained in the use of the media, can call on people they know from next door or the next village to share their expertise with their neighbors. Children themselves should be given the opportunity to develop their media skills while they learn at the same time. The fascination people in general and children in particular have with the media can be used to help instill a new culture of learning.

For NGOs working in communities all over the country, the community radio stations already play key role in early child development. In many cases, announcements are made over the radio about meetings and opportunities. Short talk shows and interview programs are cropping up to share information about ECD in local languages with parents. While few programs have been geared towards children, the adult population as an audience is already slowly becoming involved in the media world.

Broadcast for Recording

The major disadvantage of using radio and television broadcasting as a major method of delivery of educational materials is that the programs are broadcast at a fixed time. That time may not always be convenient for teachers or students. Programs are viewed for a relatively short period of time, audience retention is limited. In other countries, broadcasting has been replaced by other forms of distribution, primarily audio and video tapes.

In South Africa, education experts are in the short term looking at the concept of "broadcast for recording" as an effective means of delivery for audio and video educational material. In this plan, material is broadcast to regional and community centres. The material is recorded, i.e. copied during the broadcast and is then available for later distribution or viewing or listening.

The intended audience must be made aware of the coming broadcast in order to set their audio or video tape recorder. This can be a cost-effective means of program distribution. A number of programs from a single series can be transmitted in a batch so that viewers or listeners can receive several hours of educational materials for later use. Often there are multiple broadcasts of the same program, allowing several opportunities for recording. Accompanying printed, graphic material and other support material can be distributed separately to learning centres.

The advantages are that tapes can be used over and over and shared with others. On tape,

programs can be stopped for group discussions or questions when used in a classroom setting resulting in a more interactive use of the materials.

While there are lots of radios in South Africa, there are fewer recorders. This must be taken into consideration. Also educators must be trained in the basic skills of recording, cataloguing and properly storing tapes. Also, supplying tapes to schools must also be considered. One proposal submitted is dedicating at least one national public radio channel to the delivery of audio material for recording. The same could be done for television.

Another distribution strategy would involve providing pre-recorded audio or video tapes for educational purposes, especially since the costs of these tapes are declining.

Steps should be taken by education ministries to make sure that, resources permitting, each school and community learning centre has a radio recording and playback equipment for group and individual use.

Dedicated Educational Channels

An IDASA report by Akwe Amosu in 1992 suggests an independent Educational Broadcasting Corporation, separate from the SABC, free of direct government interference, charged with producing a wide range of educational material for both television and radio aimed at both the formal and the nonformal education sectors. The report also proposes that radio and television producers go to colleges, institutions, trade unions, etc. to work closely with the consumers of educational broadcasting, to learn their needs and what contribution they can make to programs.

The EBC would also have regional centres as well as a national unit and would generate programming dedicated to courses in specific localities. It would be staffed by broadcaster trained and specialising in education.

In 1993 SABC launched National Network Television (NNTV), which they purport to be the educational broadcasting station, although it bears little resemblance to the Amosu report recommendations.

Only when the IBA completes its investigations will there be a final policy on a truly educational or public broadcasting station in South Africa.

Non-governmental Organizations and Educational Media

In the past few years, some NGOs have attempted to fill the education gap by developing their own education media materials, including audio and video cassette tapes and newspaper and magazine inserts. Either they distributed these materials as best they could or hoped to distribute their products more widely once a democratic government was in power.

NGOs have used educational media in innovative ways for public benefit. During the run-up to the April 1994 election, some NGOs took televisions and videotapes on minibus vans and other transport into remote communities to play tapes to people in their own languages who had no other access to video. NGOs are also involved in training teachers in effective ways to use media as an educational resource. Examples are: the Community Education Computer Society in Cape Town which taught teachers to use computers to generate attractive graphics and printed

materials to aid their instruction; and Education Foundation and SACHED Trust which use newspapers and magazines to disseminate educational materials and conduct workshops to train teachers how to best use them as resources.

The Education Foundation, a South African NGO and Aurora Associates, a USAID contractor, are currently researching an inventory of education materials in all media which have produced by South African NGOs. It should be ready in mid-1995.

Newspapers and Magazines

Even with the low levels of literacy, printed media such as newspaper inserts, magazines, and flyers also play a role in early childhood development in South Africa, although according to a report by the Centre for Education Policy Development, print media has had limited effectiveness. While pre-school materials are available, distribution is concentrated in mostly urban areas of South Africa. The publications had a limited circulation due to low-income target audiences with severely limited purchasing power. Only some 20% of the materials available were distributed directly to schools. However, projects are being developed to link into schools and teacher training colleges on a more systematic basis.

The print media materials had limited impact because their use was optional, functioning in a peripheral way alongside the educational process rather than being fully integrated into it. Ideally a mixed-media educational approach needs to build a relationship between print and electronic media as part of a supportive learning environment.

There are problems with printed materials in many South African communities. Rural communication is almost exclusively oral. A study by journalism students at Rhodes University found that rural people have trouble understanding pictures on a page. Many have heard of television but never seen it. People of different cultures interpret pictures in different ways. Their perceptions are shaped by their environments.

However, printed materials do have certain advantages. They are printed frequently, usually in large numbers. It is relatively cheap to insert an education supplement into a newspaper or to distribute such supplements to schools or other education centers. The Education Foundation has found great success with their newspaper and magazine inserts and have a reach in the hundreds of thousands.

In SA newspapers in education started in late 70's in response to the deepening education crisis, according to a 1993 report by EduSource on the role of media in education; some 20 newspapers were carrying educational materials, although most targeted high school students. We should look at targeting pre-schoolers and their caregivers. Currently the magazine Molo Songololo is the only publication targeted for primary school children. There is a problem with distribution in poor communities, since newspapers are concerned about advertising and don't see them as a viable audience since most don't read English and little is published in their mother tongue. Also, advertisers have felt that poor communities had little discretionary income, therefore advertising them was pointless; recently, new wisdom has challenged this, pointing out that poor families still must make brand choices to purchase necessities.

According to a report by the Centre for Cultural and Media Studies at the University of Natal, Durban, a large untapped market exists, distribution networks are badly monitored and managed, and destined for corruption and failure.

Government Channels: Health Clinics

One possible solution to the distribution challenges is to identify places where most pre-schoolers are likely to go, especially since such a small number of disadvantaged youngsters actually attend formal pre-schools. A possible conduit for distribution of information is via health clinics. Most caregivers take children to clinics to receive inoculations. Immunisation rates range from 100% for Polio, Measles, DTP and BCG in some provinces, to as low as 41% in the previous homelands and TBVC states. Interestingly, though KwaZulu-Natal has poor quality of life indicators for education and health generally, it shows 100% immunisation rates according to *Immunisation in SA (Sept. 1994)*. This presents a real possibility for distribution of ECD information to caregivers and children. As shown in the section providing demographics, there are more than 5,000 health clinics in the country, spread throughout rural and urban areas. They are the primary health provider for most poor South Africans. They are also often understaffed and under-equipped. Any ECD interventions using this route would require very careful analysis, planning, implementation and monitoring.

Interactive radio instruction in South Africa

Interactive Radio Instruction has already found success in South Africa. The Open Learning Systems Trust (OLSET) with technical assistance from the LearnTech project developed and tested two levels of English as a second language programs which are now being tested over the radio waves (for more information, contact EDC at the address listed on this report or OLSET in Johannesburg).

LearnTech has adopted an action research approach in South Africa to investigate the feasibility of incorporating IRI methodology into new training modules and other instructional tools for early childhood development. Two workshops were convened, one in November 1994 in Durban and another in February 1995 in Johannesburg, both attended by ECD and media workers. At the former, there was a general introduction to IRI and discussions about its possible application in South Africa. The former workshop was very focused, with participants chosen based on their interest in learning to write IRI scripts. Both workshops were attended by ECD and media workers from all parts of the country, representing language and cultural diversity.

A joint collaboration has emerged between three South African ECD organisations, mainly as a result of the two workshops and other consultations. TREE in Natal, Small Beginnings in Northern and Eastern Transvaal, and Olset have joined forces to create a series of IRI programs aimed at parents, educare workers and young children. The programs will adapt the IRI series from Bolivia (a key figure from the Bolivia project, Cecilia Crespo, co-facilitated the Johannesburg workshop). Different characters, stories and activities will be created to make it uniquely South African. A pilot project is targeted for completion by the end of June with a full series of 18 programs to be completed by the end of the summer. EDC is hopeful that it will be able to continue to supply technical assistance on this pilot and on another one which is beginning in the regions around the Cape.

Connections to other media: print

Possibilities of connecting the IRI radio programs to other media are strong. The Education Foundation in Durban has expressed an interest in putting information about the programs in their newspaper inserts. Other opportunities to reinforce learning are also being exploring.

Connections to other radio formats

Connections to other formats are also being explored. In South Africa, community radios are using talk show formats and interview styles to bring expertise into the households. An interview or call-in show directly after an IRI program may help regionalize programs or make them more easily understood in diverse communities. This type of format provides the opportunity to speak to the adult about the lessons taught in the IRI interactive programs.

Radio soap operas can be used for caregivers to teach important lessons of health, cultural mores, and other areas of early child development. The success of radio soap operas depend on trained writers who have a profound understanding of their audience and who can blend the social message comfortably but effectively into the story line. This is not inexpensive but can be effective.

The connection of radio programs to cultural information is also important. This can be done both within the IRI programs and by connecting them to other radio programs which emphasize and reify African cultures.

Connections to other systems of delivery: health clinics and educare centers

The IRI programs and their reinforcing media have opportunities to be distributed through various means. Research by the HRSC suggests that health clinics receive more of the young populations and their parents than any other stable institution and may offer a vehicle for the distribution of reinforcing print materials and video displays. Providing information through these conduits may prove to be very important. The potential to use health clinics is being researched by LearnTech through a subcontract with the HRSC currently.

Timing

Research indicates mornings may be better because both pre-school children and their caregivers may be less involved in other activities. In the afternoon, children tend to be more active outdoors as their older siblings return home from school. The caregiver may be preoccupied with cooking and preparing for the family's return from work. Pre-school education programs on television should be broadcast before 2:00 p.m. in the afternoon or in the morning without overlapping radio programs, avoiding the problem of fragmenting the audience.

Other potential areas: accreditation

Accreditation is an important issue in the field of early child development. For other subjects, UNISA has programs to help students prepare for exams. The Department of Education & Training has been broadcasting for more than 20 years on SABC. However, SABC surveys show that less than 15 percent of students tune in to SABC education programs. The Congress of South African Trade Unions (COSATU) has started literacy programs on SABC radio. To date, no programs assist in the field of ECD. Using IRI programs as part of the practicum would bring the culture of the ECD center to the student as well as the professional content.

Emphasizing dual audiences

Given the high density living patterns in black communities--there's an average of eight people living in one township dwelling--it is unlikely that a child has solitary access to media. Research in South Africa indicate that caregivers usually listen and watch with the child when pre-school education programs are on. In addition, children learn more from these programs when their caregivers are actively involved. Caregivers and older siblings therefore should be taken into account when developing programs.

Final thoughts to consider

One can argue convincingly that of all the media, radio has the greatest potential for impact on early child development for the communities most in need in South Africa. But there were only three independent radio stations, the rest have been SABC.

Low literacy levels, poverty, oral traditions and the lack of electricity in many areas are all factors that contribute to the dominance of radio. The high levels of illiteracy mean that the effectiveness of written material is limited, although the creative use of printed pictures can be utilized. Also the relative expense of televisions and the relative lack of electricity in poor communities limits the reach of television. However, virtually every community has access to a battery-powered radio.

While the use of media in education in this report tends to focus on the use of radio and television, other media can also be considered including computers, videodiscs, CD-ROM. Other considerations include the lack of funds coupled with theft and vandalism that grew out of the apartheid years. School principals say that even if media equipment is provided, it would be stolen within weeks and therefore is not worth the investment. The new democratic government has launched a campaign of payment for rent, electricity, and other services after years of non-payment as a form of protest against apartheid. Part of this should include a related campaign that stresses the schools belong to the community. But clearly these shifts in attitudes won't take place overnight but efforts should be made to get things headed in the right direction.

Most importantly in South Africa, which has thrived on a culture of protest and consultation, grass roots participation is essential at all stages of planning and implementation. Only with grassroots involvement is it possible to understand and be absolutely sure about who is using the programs. Without that knowledge, research shows that the programs won't work because they are likely to be irrelevant or inappropriate. An important part of the strategy is to draw on the community in order to develop staff who know the needs of the people, children and caregivers alike who they will be serving. In addition to input from the community, educators and media professionals; there must be co-operation from donors, consultants, as well as providers of technological hardware and software.

Bringing together everyone who will be involved in using media for early child development will result in effective research, media production, evaluation and the use of educational resources. Broadcasters and other media professionals can assist in developing and producing programs and printed materials for children, parents and other caregivers. Broadcasters can also help train educators and other community based workers in how they can use the technology to enhance early childhood development. And most importantly, those with expertise in early childhood development are able to contribute their knowledge so that effective programs can be produced,

building on the knowledge of education and media production experts.

Training is the key. Technicians, producers, educators and researchers need to upgrade their skills to develop the quality media that the SABC is looking for and that the communities can use. There is a critical shortage in South Africa of people trained in these areas. Key personnel need basic methods of putting together educational programs. According to a HRSC report, pre-school professionals have a negative attitude toward education programs on radio and television and thus rarely use media as teaching or training tools. This resistance can also be addressed through training and a more well-defined culture of learning at this level can be developed.

A crucial consideration is who will provide the training for educators, media professionals, community workers and others and who will provide the funding for that training. South Africans have expressed strong reservations about trainers coming in from outside who know nothing about the specific and peculiar problems facing education and media production and distribution in South Africa, while trying to impose their sometimes inappropriate solutions from other countries. This issue was debated in the February LearnTech workshop and in activities before and after involving LearnTech technical assistance.

At the February LearnTech workshop in Johannesburg, the representatives present from the major ECD organisations nation-wide identified the follow up needed to effectively institute wider media activities in support of ECD, and allocated roles for where outside technical assistance, through the Education Development Center could be provided, either exclusively, or jointly with South Africans. Those areas of technical assistance are as follows:

- 1) Media project implementation, especially budgeting
- 2) Language adaptation
- 3) Advocating radio use within the ECD community
- 4) Finding resources and building networks
- 5) Reviewing scripts for adherence to IRI principles and techniques
- 6) Formative and summative evaluation
- 7) Scriptwriting training, preferably in group settings
- 8) Building interactivity into indigenous programs
- 9) Using programs in a professional and sophisticated manner
- 10) Programs for adult education and child education at once

Workshop participants advocated an approach to the technical assistance whereby teams of education media developers would be trained and coached in writing and evaluating through intermittent workshops and on-site consultations until personnel are independent.

Quality is more important than quantity. Given the limited financial resources, educational programs must be of the same standard or better than other programs generally available in the various media. Basic principles of pedagogy such as interactivity and demonstration can be incorporated in a respectful and meaningful way. Children and their caregivers want to listen, watch and learn. Programming can be entertaining as well as educational and stimulating. If not, the effectiveness of the programs will be limited and could actually be a waste of important resources.

Conclusions

Education and the media are two areas where change is occurring quickly and the stage is being set for all South Africans to soon have a higher literacy level and have the ability to use the media and distance education for educational and cultural purposes. In the meantime, however, much work is to be done. Over the past year, the opportunities and responsibilities which face South Africans have changed dramatically. The systems of media and education which were in control for generations are suddenly in a state of flux and under enormous pressure to decentralize and bring in black and colored South African expertise and priorities. In response, the Government and the RDP and the private sector are struggling to achieve a new course of action which will fulfill South Africa's dream of having a fair and unbiased society while maintaining the budgetary means to be the gateway to Africa. It is a tricky business to be fair and be a leader at the same time. To summarize some of the major points of this document,

14. **Radio use is high in South Africa, particularly with black populations in rural areas.** According to the Human Sciences Research Council (HSRC), black households are tuned into radio for an average of nine hours per day; the television is on for five hours per day. But according to the HSRC report, the overall use of the two media does not involve children in any significant way. In some areas of South Africa, radio is the only form of communication with other communities beyond a few miles that a family may have. In some rural areas, educare (early child development) training organizations often use the community radio networks to announce meetings, health interventions and other important events and report they are the only reliable source of immediate communication available.
15. **South African has large percentage of very young.** South Africa has a very young population by world standards. Of the total population, 13% is under the age of four and 18% is under the age of seven. In some areas, including most of Bophutatswana and the Transkei and parts of Elbow, Gazankulu, KaNgwane and KwaZulu, more than 20% of the population is under the age of four .
16. **Native tongue is a central issue.** Many adult South Africans do not speak English or Afrikaans and have not had adequate exposure to a quality education and the ability to use the media and distance education. Under white control, two languages (English and Afrikaans) were the only official languages. Now there are eleven.
17. **Primary school advancement improved by ECD efforts.** Evidence suggests that investment during the preschool years improves primary school advancement as well as lays down the foundation for skills in conflict resolution and problem solving. In the mid-1980s the Department of Education and Training developed a bridging program as part of the first year of school which was government-funded and which effectively provided a year and in some cases two years of pre-primary education for children who need it. By 1992 the program involved some 400,000 pupils in 1,230 schools. The failure rate in the first year of primary school for these children was reduced from 21% to 3%.
18. **Some provinces worse off than others.** While the whole of South Africa would benefit from improved circumstances, the provinces with the worse overall profiles in terms of quality of life and social development indicators including poverty levels, water supply and

nutrition are the Eastern Cape, KwaZulu-Natal and the Northern Transvaal. The second group of regions considered in the worst shape are Orange Free State and Eastern Transvaal. When one takes additional data to look at per capita education expenditure levels, teacher/pupil ratios, concentrations of students in primary schools and primary school drop out rates, the provinces follow a similar pattern, almost invariably. Although blacks are the most disadvantaged overall, there are pockets of poverty, illiteracy and poor health in many colored communities.

19. **Government expenditure on ECD low to date.** In 1993 about 30% of white children under seven had access to some form of preschool provision compared to 10.7% of black, colored and Indian children under seven. And looking at these figure, the overwhelming number of children in pre-school programs are white. Government expenditure on each black child was only R38 per year compared to R752 per colored child, R118 per Indian child and R1 684 per white child.
20. **Black parents pay for ECD services.** Parents and caregivers with low literacy skills have large responsibilities to provide quality educational environment for young children both in educare centers and at home. In most cases where educare is involved, parents pay for it themselves. About 80% of operational costs of educare services for black children comes from school fees paid by their parents. This action also indicates the value of childcare to poor South African families.
21. **Both adult learners and children need support.** The data indicate the strong rationale for ECD activities, both programs which target children and programs which target adult learners, as an intervention to the high primary school drop-out rate, the high number of children out of school, and extensive health and nutrition problems among large numbers of the pre-school and primary school population. The data strongly indicates that ECD interventions must be directed as much to caregivers as to children, and must address illiteracy, low education levels and poor living conditions.
22. **Educational media for ECD around the world has been much more successful when it targets adult learners as well as children.** Research around the world shows that media programs for ECD is much more effective at improving the child development practice in center-based and home-based programs as well as with the general hard-to-reach population when it targets adults as well as children. Programs which incorporate learning strategies rather than just entertainment are also more effective.
23. **Few high quality media programs created to improve educational quality.** No programs exist in South Africa and few programs exist in developing countries for the purposes of increasing the quality of educare centers for both adults and children. None has attempted to do what interactive radio instruction has done in Bolivia: improve the quality of educare through addressing the learning needs of both audiences
24. **SABC has little experience with educational programs for the poor, but is looking for alliances.** The SABC and community media projects have not exploited the opportunities to provide educational programs in a variety of languages to these adults and

their children sufficiently. The SABC also does not have experience building interactivity into programs with the purpose of enhancing quality in educare centers. The SABC has taken an interest in decentralization and broadcasting quality educational programs and has asked educare NGOs and EDC to collaborate with them, however.

25. **New corporations provide both opportunity and obstacles.** Large corporations are coming into South Africa quickly which provide both an excellent opportunity for new educational and economic resources, but also the potential for South Africans to be exploited in a new and unfamiliar way.
26. **Programs targeting adult should incorporate learning tools which realistically help them learn.** Adult learners of early child development do not have interactive tools they can use as part of their professional courses which adequately reflect the cultures and priorities at hand. For illiterate parents, no programs for learning about ECD are available.
27. **Community radio can play a strong role.** The Independent Broadcasting Agency is granting licenses to community radio stations, which are, in turn, providing free airtime to individuals and organizations who can produce high quality educational programming. This is a huge opportunity if high quality programs can be created.
28. **Colleges and systems of accreditation are becoming involved.** Colleges such as the Umlazi College in the Natal are developing professional courses in areas such as early child development which will strengthen the field, support adult learners and help promote a new generation of stable and confident children. They need direction and linkages to quality tools and programs.
29. **USAID has invested in ECD.** USAID has invested money in the field of early child development ensuring that the network of NGO educare providers is capable to collaborate, learn new skills and be instrumental in the development of a new South Africa. Attention to finding ways these institutions and their services can reach larger populations and are sustainable through alliances with government, media and educational systems is vital to their long term success.
30. **The potential for methods such as IRI are high.** News ways of using the media for educational purposes are being explored, such as interactive radio instruction, public service announcements, talk show formats, educational television, radio and newspaper in print. The potential for IRI methodology to be successful is high given the high level of interest of South Africans and the success in other countries.
31. **NGOs are forming networks.** All around the country NGOs are forming networks and associations to facilitate training, profit from bulk-buying schemes, reduce duplication of services, and share ideas and materials. In March 1994 a national ECD organization, the South African Congress for Early Childhood Development, was established to influence policies to be implemented by the new democratic government. Inter-institutional agreements have been obtained between EDC and NGOs working with media and early child development education in the PWV region and in the Cape to work collaboratively around

the piloting of interactive media programs which will enhance the skills of adult learners. Collaboratively, they have agreed to facilitate the institutionalization of educational media within local and governmental training programs, and in all cases, have already brought in funds to pay for production fees (indication of sustainability).

32. **ECD NGOs want to collaborate with government.** In the past there was little collaboration between ECD NGOs and government, but this is changing now that the country has a democratic dispensation. The Centre for Education Policy Development argues that it is time to establish a partnership between NGOs, government, the private sector and communities to develop a support system for the health, nutrition, care and education of young children. The SABC and Congress of Early Child Development have both approached LearnTech staff with the desire to collaborate and work towards similar goals.

BIBLIOGRAPHY AND PEOPLE CONSULTED

Jim Callahan, United States Information Agency

Ria Van Vuuren,

Wilna Botha, Education Foundation

Jeff Wolfson

Neil Butcher, SA Institute for Distance Education

Nicola Galombik, Electronic Media in Education Forum National co-ordinator

Daniel Plaatjies

Anne Barrow, Ex-Chairperson of Child Welfare, Midrand (Anne set up pre-school at Phola Park informal settlement)

Jeanine Du Toit, Executive Producer, Children's programs, SA Broadcast Corporation

Bronwen Eckstein, Consultant, Early Childhood Development, Johannesburg

Sophie Mabe, Teacher, Ntataise Project

Maria Mohlahleli, Administrator, Ntataise Project

Sam Nakedi, Co-ordinator, Educational Radio Programs, SA Broadcast Corporation

David Niddrie, Group General Manager, Strategic Planning, SA Broadcast Corporation

Jacques Rossouw, Manager, Listener Clubs, Kensington, Johannesburg

Anne-Marie Roux, Manager Corporate Internal Communications, SA Broadcast Corporation

Scott Kitty, Accountant and member of Television Transformation Committee SA Broadcast Corporation

Pauline Sefudi, Teacher, Ntataise Project, Skietlaagte

Rebecca Sothoane, Trainer, Ntataise Project

Sirk Van Wyk, Director, Human Resources; Grinaker. Sirk is in charge of a street library project for disadvantaged communities.

Nikki Watton, Housewife who attends book listener clubs in Kensington, Johannesburg

Shona Weldon, Producer, Kideo; Children's programs, SA Broadcast Corporatio

REFERENCES CONSULTED

Akwe, Amosu. Media: New Routes for Radio, The Education Foundation: MIE (SA) Print: Report - Adults Radio: Published by IDASA

An Introduction to OLSET: The Open Learning Systems Education Trust, Pamphlet

Bordenave, Juan E. Diaz. Communication and Rural Development

Botha, Wilna. The Role of the Media in Education: A Discussion Document, Johannesburg, An EduSource Publication

Cohen, Alan. Guide to Networking, Boyd & Fraser Publishing Company, A Division of South-Western Publishing Company: Boston, MA 02116

Daily Programming: A Detailed Programming Schedule for an Educational Radio Station, Department of Journalism and Media Studies; Rhodes University, Media Research and Training Unit: Community Health Project

Edutel, Bophuthatswana Broadcasting Corporation: A Mission Statement

ET R&D: Educational Technology Research and Development; Vol. 38, No 4, 1990. Children's Learning from Television: Research and Development at the Children's Television Workshop, A Quarterly Publication of the Association for Educational Communications and Technology

First Draft: The Electrification of Schools, The Education Foundation

Frederikse, Julie. The Use of Radio for Adult Basic and General Education: National Education Policy Investigation Policy Options Report, Adult Basic Education Research Group, April 1992

French, Edward. Draft: Towards a Masterplan for the SABC's Long-Term contribution to Adult Literacy and Basic Education in South Africa, Preliminary Notes and Questions for Discussion, August 1991

Govender, Pat. The Careers Research and Information Centre (CRIC), Eduspectrum Committee. Outline of Objectives and Proposed Action Plan, 15 September 1992

Grinaker System Technologies. Project Capricorn: Implementation of an Educational Upliftment Project in Gazankulu

Harrison, Paul. The Third World Tomorrow, A Report from the Battlefield in the War Against Poverty, 2nd Edition

HSRC Education Research Program. The Use of Radio and Television in Education and Training

Impact: News Brief of the Open Learning Systems Education Trust. *Facing Up to the Education Challenge*, August 1992

Infant/Toddler Caregiving: An Annotated Guide to Media Training Materials

The Learning Channel; Television News From The Learning Channel, Pamphlet

Learninglink Concept, A Pamphlet

Lidell, Christine; Masilela, Pauline; *Utilization of Pre-school Education Programs on Radio and Television - Black South African Children in Urban and Peri-Urban Areas*, Institute for Educational Research: Human Sciences Research Council

Liebtrau, J.P. Dr. *Business Marketing Intelligence*

Liebtrau, J.P. Dr. *Comments on the BMI Report*

Lyons, P.J. *Education in South Africa: The Impact of Technology*

Moss, G.D. (Ed.). *China's Television Universities*, British Journal of Educational Technology No 3, Vol. 14, October 1983:

National Nutrition and Social Development Program Task Team: NNSDP *Restructuring Proposal*, 30 July 1993

National Nutrition and Social Development Program Task Team: NNSDP *Restructuring Report*, 30 July 1993

OLSET, Open Learning Systems Education Trust. *The Radio Learning Project, South Africa (RLP SA)*

Perry, Nancy J. Fortune International. *What We Need to Fix US Schools*

Pinnock, Dan; Polacsek, Margit. *Rural Media: Communicating Electoral Process to a low-literacy Audience*, Senior Students in the Department of Journalism and Media Studies, Grahamstown, South Africa; Co-ordinated by the Media Research and Training Unit

Program Schedule File; SABC Radio Active

Radio Zulu; Program Schedule

Rice, Mabel L.; Huston, Aletha C.; Truglio, Rosemarie; Wright, John. *Words From ASesame Street: Learning Vocabulary While Viewing*, The Education Foundation: MIE (USA) Print: Report Adults Research Report

Science and Maths Multi-Media Learning Resources Program

Seligman, David. *The Challenge of New Technology*, Development Media Services, London; SAIDE: Conference: Johannesburg 8 September 1992

Sesame Street; Research Bibliography; *Selected Citations relating to Sesame Street 1969-1989*: Xerox Copy: Research Division: Children's Television Workshop, One Lincoln Plaza, New York, NY, 10023

South African Broadcasting Corporation: *Department of Educational Programs* (Television and Radio)

Spier, André; *Electronics and the Crisis in Education* in McGregors Education Electronics, Cape Town, Jutta, 1992

State of the Nation Report: The Media and Autumn, The Education Foundation MIE (SA); Adults Media in Education

Tilson, Thomas D.; de Fossard-Nelson Esta; *Radio for Improving Basic Education in South Africa: Some Perspectives*, LEARNTECH Learning Technologies for Basic Education

Van Zyl, John. *Radio and TV Education: The Case for and against Technology*, McGregors Education Alternatives

Wheatley, Earna. *The Integration of Technology-based Training in Human Resource Development*

Wolfson, Jeff Dr. *Integrating Technology-based Training in Human Resource Development*, Paper given at the IPM's HRD Division Conference HRD Practices for a changing workplace, 10 June 1992

Wolfson, Jeff Dr. *Reconstruction of Education in Southern Africa: The Provision and Management of Appropriate Learning Resources*

Copyright © 1997 Education Development Center for the LearnTech Project

Early Childhood Counts: Programming Resources for Early Childhood Care and Development.
CD-ROM. The Consultative Group on ECCD. Washington D.C. World Bank, 1999.