Bangladesh

Brazil

China

Egypt

Distance Education in the E-9 Countries

India

The Development and Future of Distance Education Programmes in the Nine High-Population Countries

Indonesia

Mexico

Nigeria

Pakistan

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PREFACE

The idea of this publication goes back to the meeting held in New Delhi, December 1993, between Education Ministers of the Nine High-Population Countries (E-9): Bangladesh, Brazil, China, Egypt, India, Indonesia, Mexico, Nigeria and Pakistan. While committing their countries to achieving basic education in the nearest future, the ministers expressed the hope that distance education and information technologies would play a major role in the development of Education for All. The item figures visibly in the Delhi Declaration, and several initiatives have been developed in the E-9 countries in response to the need of reaching out the excluded and provide them with quality education.

It is widely acknowledged that the past ten years have seen important progress towards Education for All in almost all of the E-9 countries, along with an intense development of distance education experiences. They gave birth to a surprising change of vision and rhetoric to express the hopes and promises attached to concepts of modern technologies. Oddly enough, buzzwords and catchy ideas were adopted and replaced well-known definitions of distance learning. There was talk of a new information age, revolutions such as Internet or NICTs (new information and communication technologies) were announced and the concept of globalisation became the prime mover of all things. Given the missionary character of such messages, too many experts or gurus jumped on the idea, without considering the hard facts such as the costs and uses of modern technologies in traditional societies. Later, and thanks to the accumulation of experiences, a differentiated and pragmatic understanding was developed. This was partly because technologies have become more user-friendly and partly because research on distance education programmes, have produced findings confirming the need for well-conceived projects, which are learner-oriented but also cost-effective and appropriate to the context.

This publication is based on nine national projects, which consisted of studies, workshops and newsletters in national languages. The objective of each national project was to identify major recent or ongoing projects, programmes and policies, assess their scope and impact, look at cost/benefit aspects and evaluate their future. The present study provides a synthesis of the nine different experiences, and represents an attempt to elaborate an objective analysis of the distance education mode for basic education in the current context of expanding Education for All and improving its quality by using the possibilities of modern technologies.

The authors of the publication, Dr Charlotte Creed and Dr Hilary Perraton of the International Research Foundation for Open Learning must be thanked for their efforts in bringing together the diverse pieces of an immense puzzle and thus providing the reader with a well-documented insight into what appears to many the future of education. The conclusions of their study not only point to success stories but also to problems such as lack of information on learning achievement and costs, and the need for more research on a variety of variables in distance education mode.

Regarding UNESCO, this publication will constitute the basis for a renewed effort to better monitor progress of knowledge on distance education and define its place in developing Education for All national systems. The findings of this study and those to come should enable UNESCO to improve its knowledge base in order to better serve countries when planning to embark on important distance education programmes.

Wolfgang Vollmann
Co-ordinator of the E-9 Initiative

LIST OF ACRONYMS

AI	Accredited institutions
AIOU	Allama Iqbal Open University
AVI	Accredited vocational institutions
B.Ed.	Bachelor of Education
BOU	Bangladesh Open University
BRAC	Bangladesh Rural Advancement Committee
CCRTVU	China Central Radio and Television University
CERNET	Chinese Educational Research Network
CETV	China Education Television station
CT	Certificate of teaching
DE	Distance education
DIET	District Institutes of Education and Technology
ECD	Early childhood development
EFA	Education for All
EGS	Education guarantee scheme
FEPRA	Functional Education Project for Rural Areas
FRM	Roberto Marinho Foundation
FT	Full-time
GDP	Gross domestic product
GNP	Gross national product
ICDL	International Computer Driving Licence
ICT	Information and communication technologies
IDLN	Indonesian Distance Learning Network
IFE	Integrated functional education
IFLP	Integrated functional literacy project
IGNOU	Indira Gandhi National Open University
IRFOL	International Research Foundation for Open Learning
ISP	Internet service provider
JSS	Junior secondary school
LDB	Lei de Diretrizes e Bases da Educação
NA	Not available
NCERT	National Council for Educational Research and Training
NCE	Nigerian Certificate of Education
NCNE	National Commission for Nomadic Education

NFE	Non-formal education
NGO	Non-governmental organisation
NPA	National Programme of Action
NPEC	Nigerian Primary Education Commission
NOS	National Open School
NTI	National Teachers Institute
NWFP	Northwest Frontier Province (Pakistan)
ODL	Open distance learning
OJS	Open junior school
OJSS	Open junior secondary school
PAREIB	Programa para abatir el rezago en education inicial y basica
PCP	Personal contact programme
PRTVU	Provincial Autonomous Regional and Municipal Television Universities
PTC	Primary teacher certificate
PTOC	Primary teachers orientation course
PUSTEKKOM	Centre for Communication Technology for Education and Culture
Red Edusat	La red satelital de televisión educativa
Red Escolar	La red escolar de informática educativa
SAIED	Special accredited institutions for the education of the disadvantaged
SAP	Social Action Programme
SEED	Secretariat for Distance Education
SEP	Special english programme
SSC	Secondary school certificate
STLP Terbuka	Indonesian Open Junior Secondary School
STV	School-based instructional television
TACC	Technology Access Community Centre
TCII	Teacher college level II
TPI	Cipta Televisi Peddidikan Indonesia (Indonesian national TV channel)
UBE	Universal basic education
UNDP	United Nations Development Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNICEF	United Nations Children's Fund
VCR	Video cassette recorder

INTRODUCTION

The World Conference on Education for All (Jomtien, Thailand, 1990) was followed by the Summit of the Nine High-Population Countries (New Delhi, India, 1993). It brought together the leaders of Bangladesh, Brazil, China, Egypt, India, Indonesia, Mexico, Nigeria and Pakistan, subsequently referred to as the E-9 countries. Together, they are home to more than half of the world's population. They share certain common features and problems: strong demographic pressures; substantial remote populations; unwieldy education systems; relatively low levels of central government funding for education; persistent problems in reducing adult illiteracy; and, apart from Brazil, a wide literacy gap between men and women.

Out of the Delhi meeting came the E-9 Initiative in which the E-9 leaders made special commitments to reach Education for All goals within their individual countries. Great importance was attached to distance education as a means of addressing their considerable educational challenges. The E-9 Initiative is supported by UNESCO, UNICEF, UNFPA and UNDP, and promotes co-operation among its members to accelerate progress in education.

PART 1
AN OVERVIEW OF DISTANCE EDUCATION IN THE E-9 COUNTRIES

This report is the result of collaborative research between the International Research Foundation for Open Learning (IRFOL) and Ministries of Education, and educators working in the E-9 countries. On the basis of project data supplied by UNESCO, IRFOL compiled draft summaries of distance education projects that worked towards Education for All (EFA) goals within each country in the 1990s. These were then distributed through UNESCO Regional Offices for correction and additional comments from each country. Any changes were incorporated into the final draft of the report. We would like to take this opportunity of thanking all the contributors for their time and co-operation.

Despite their huge differences of culture, wealth and demography, the E-9 countries (Bangladesh, Brazil, China, Egypt, India, Indonesia, Mexico, Nigeria and Pakistan) have some educational challenges in common. All face demands for more primary-school places, an expansion of junior-secondary schools, and for more and better-qualified teachers. All, too, have significant educational backlogs of people who missed out on some or all of their education, reflected by the proportion of their populations who cannot read or write. To differing degrees all tend to offer more education to boys than to girls. Since the E-9 countries began working together in 1993 all have committed themselves to using distance education as one means of addressing some of their needs in basic education. This report examines what they have achieved. It draws on a review conducted by UNESCO with the Ministries of Education of the E-9 countries in 1998-99.

Despite the similarities, there are profound differences between the E-9 countries in their progress towards EFA. The demographic analysis prepared for the World Education Forum (Dakar, Senegal, 2000) summed it up:

> Three main patterns emerge from the analysis of the estimated and projected primary-school-age population and enrolment trends between 1980 and 2010 in the E-9 countries. In China, Indonesia, Brazil, Mexico and Egypt, the decline of the primary-school-age population seems to be accompanied by an increase of enrolment resulting in the achievement of universal primary education most likely at the latest by 2010 (or shortly after for Egypt). In such countries the challenges are thus now to improve learning conditions and achievement, increase the internal efficiency of education systems, reduce school disparities in educational outcomes and expand participation in education beyond primary school. In India, the decrease of the primary-school-age population expected for the period 2000–10 is not predicted to be coupled any longer with an increase in primary enrolments so that the achievement of universal primary education still looks some way ahead, at some point after 2010. Finally, in Pakistan, Bangladesh and Nigeria, the expansion of primary-school-age enrolments seems to be partially offset by the persisting increase of primary-school age cohorts.
>
> (Siniscalco, 2000, p. 51)

These figures are reflected in the figures in Table 1. They show that all nine countries face major challenges if they are to expand primary education so that all children get into school, and stay there to the end of the fifth year. Bangladesh, India, Nigeria and Pakistan still have far smaller numbers of girls going to school than boys. The needed expansion of primary schools will, in turn, create a demand for increased numbers of teachers and for measures to improve their training. In the countries likely to achieve universal primary education in the next decade, a growing demand for junior-secondary schools, and for teachers to work in them, is likely to follow. Meanwhile the figures for adult literacy – especially in Bangladesh, Egypt, India, Nigeria and Pakistan – serve as a proxy for the large numbers of adults who received either an inadequate or no formal education.

The E-9 countries have used distance education for four different purposes in order to work towards their EFA goals.

First, distance education has occasionally been used either to offer an alternative to formal primary education or to support primary schools. Brazil and Mexico, for example, have experimented with broadcast-based alternative primary schools. But, given the imperative to provide primary schools for all children, this has not been the main task for distance education.

Second, in contrast, there are some long-standing and successful examples of the use of distance education to offer junior secondary schooling. The unmet demands at this level as countries moved closer towards universal primary education led Brazil and Mexico to develop very large projects, and India and Indonesia rather more modest ones. The demographics suggest there is a potential demand here in China and Egypt.

Third, a variety of programmes by governments and by non-governmental organisations (NGOs), have been developed to meet the needs of out-of-school adults. These tend to be smaller than the junior secondary programmes. In some parts of the world, non-governmental organisations have been particularly active in this area and their work may be under-reported.

Fourth, teacher supply is critical to all levels of education. Distance education has been widely applied to the education of teachers, both in an attempt to meet an emergency teacher shortage and to upgrade the qualifications of members of the profession.

National reports are eloquent about the significance of distance education for these various purposes. But, with a handful of exceptions, there is a mismatch between the scale of the activity reported in UNESCO's survey and the rhetoric about the importance of distance education. The mismatch provokes two questions: is distance education in practice relevant to the goal of achieving EFA and is it perceived by governments as being relevant? There are partial answers to both questions in the country-by-country summaries that form the Part 2 of this report, and in the nine-country analysis in Part 3. They show that experience with distance education has been dominated by work at junior-secondary level and for teacher training.

In *Bangladesh*, while educational broadcasting goes back many years, distance education has been dominated by the work of the Bangladesh Open University. Its work is more significant for basic education than most universities as, alongside its tertiary-level degree and diploma courses, it is responsible for non-formal and secondary education, especially for remote, disadvantaged and rural communities. It also runs in-service education programmes for teachers.

Brazil has long experience of using broadcasting for out-of-school education and the accounts in the UNESCO survey concentrate mainly on junior-secondary level programmes of which, *Telecurso 2000* is said to be the largest pre-tertiary distance education programme in the world. As elsewhere in Latin America, non-governmental organisations have been active in adult education. There are also large-scale distance education programmes for teachers.

China has used distance education within the context of a shift from universal primary education to universal nine-year education. The scale of the country makes satellite broadcasting economically viable. Large numbers of teachers have been trained but there is also experience of using broadcasting and computer-based technologies in school and in adult basic education to provide agricultural skills.

Egypt reports on the use of communication technologies in school, and of the use of both radio and videoconferencing for teacher education. The level of use appears to be lower than in the other E-9 countries.

India has used distance education both for junior-secondary education and for teacher training. Given the number and the vigour of non-governmental organisations in India, their work in distance education may be under-reported, especially in adult education. The National Open School, which has now been joined by State Open Schools, offers the equivalent of junior and senior-secondary education. A variety of programmes have been launched for the in-service training of teachers.

Indonesia has used distance education programmes both to support the work of regular schools and to create a network of institutions for out-of-school children, principally at junior secondary level. Broadcasting, especially on radio, has been central to much of this work. Indonesia has also used distance education for teacher upgrading, with students numbered in the millions.

In *Mexico*, *Telesecundaria* dominates the scene with over thirty years of experience. It offers an alternative junior-secondary education, mainly in rural areas, using television broadcasts that support the work of monitors. It has become an established part of the education service. There is also some experience of using a similar approach at primary level. Only limited use appears to have been made of distance education for teacher training.

Accounts of distance education in *Nigeria* are dominated by two activities – a programme of basic education for nomads, making use of radio, and the work of the National Teachers Institute in training teachers. It is perhaps unique as a free-standing dedicated distance-education institution for the education of teachers.

Pakistan established an Open University in 1974, now the Allama Iqbal Open University, which has dominated distance education within the country since then. While much of its work is for regular university programmes, it has also carried out a number of experimental projects, using distance-teaching methods for basic education and teacher-upgrading programmes for primary-school teachers.

Distance education can use a range of technologies. For much of the twentieth century it was dominated by print and this remains a staple of many programmes in the E-9 countries. The open schools of India and Indonesia, for example, use printed materials as their main teaching

mechanism and correspondence methods have been widely used for training teachers. The scale of the E-9 countries, however, and the large numbers of potential students, have made it possible for them to make extensive use of broadcasts. Mexico's *Telesecundaria* is the survivor from an era of large-scale television projects. Many others projects especially in smaller countries, have disappeared. China and India have both long used satellite broadcasts for education. Indonesia has seen radio as of especial importance for a population scattered through its archipelago. Today, countries are beginning to use more advanced technologies. India has experimented with videoconferences for teachers while computer-based technologies have been used in distance education at tertiary level and may trickle down to some projects at basic level. Mexico is looking at the potential of fibre-optic cable as a distribution system.

Two cautions are, however, necessary. First, the more sophisticated and the more interactive the technology, the higher the unit cost is likely to be. Second, the greatest educational problems are often in the most remote areas where electricity supplies may be irregular or non-existent, telephones scarce and lines difficult to maintain. In such areas, the servicing of electronic equipment tends to be difficult, costly and slow. Sensible choices between technologies need to reflect both geography and economics.

Much of the activity reported here has been the responsibility of governments, seeing nonconventional approaches to basic education as their responsibility. But, even within that framework, there is a range of different organisational structures. At junior-secondary level, for example, both India and Mexico have developed structures that give a considerable degree of autonomy to the *National Open School* and *Telesecundaria*. Bangladesh and Pakistan have seen secondary education at a distance as being within the responsibility of their open universities, which enjoy a similar measure of autonomy to other universities.

Teacher education has been the responsibility of various agencies including government departments and open universities. The pluralist traditions of Latin America have led to a different approach exemplified by *Telecurso* in Brazil, where a public-private partnership has brought together government and one of the large private broadcasting networks. One critical variable here is the relationship between the work of a nonconventional, distance-teaching institution and the rest of the education system. In several instances, students at a distance have worked for qualifications that are accepted as equivalent to those offered in school but to a different curriculum. It would be useful to know to what extent such qualifications actually have parity of esteem with the others. Often there is evidence of a lack of articulation between alternative and mainstream education. Distance education for teachers in India seems a long way from the District Institutes of Education and Technology (DIETs) where much of the activity of teacher support is concentrated, perhaps because such education has often been conducted by open universities rather than by the regular teacher-education system. In a number of instances we find that relatively few of the students who study at a distance at junior-secondary education are able to go on to senior-secondary education.

The UNESCO survey makes it possible to draw some conclusions about the tasks for which distance education has been used, the audiences after reached the choice of technologies and the institutional structures adopted. But two things are missing from the reports. First, they are woefully short of evaluative data. We know something about programmes that have been developed and sometimes, though not always, about the numbers they have attracted. Rarely do we have any solid data to indicate how far they have succeeded or failed. Second, there is even

less information about costs. There are theoretical reasons to expect distance education to have an economic advantage under some circumstances. In Part 3, we come back to these topics in defining a future research agenda. ■

Table 1. Basic Data on the Nine Countries

	a		b	c	d	e	f	g	h	i	j	k
	Population		*GNP per capita*	*Primary enrolment (000)*	*Secondary enrolment (000)*	*Primary teachers (000)*	*Secondary teachers (000)*	*Gross enrolment ratio 1 year*	*Net enrolment ratio 1 year*	*Survival rate Grade 5*	*Gross enrolment ratio 2 years*	*Adult literacy*
	Total (in million)	*Annual growth rate in %*										
	2000	1995-2000	1997	1997	1997	1997	1997	1997	1997	1997	1997	1997
Bangladesh[1]	129.1	1.70	370									
MF				18361	NA	NA	NA	96.5	81.4	70.3	NA	55.9
F				8783	NA	NA	NA	94.5	82.9		NA	48.1
Brazil[2]	170.1	1.31	4420									
MF				35838	*6405*	*1414*	*353*	128.0	95.3	66.2	*62.0*	85.3
F				NA	NA	NA	NA	NA	NA		NA	85.2
China	1284.5	0.91	780									
MF				139491	60201	5830	3607	104.3	98.9	90.5	70.1	83.9
F				66456	30364	2819	1374	103.9	98.8		66.2	76.8
Egypt[3]	68.5	1.89	1400									
MF				7351	*6727*	310	425	99.6	91.8	95.8	74.9	56.0
F				3508	*3048*	162	164	96.1	89.4		69.9	NA
India[4]	1013.7	1.64	440									
MF				109413	66728	1872	2733	90.3	71.1	52.3	49.4	57.7
F				47586	25944	643	973	81.5	64.0		39.3	43.9
Indonesia[5]	212.1	1.43	580									
MF				29273	*13096*	*1327*	*987*	113.6	95.0	85.3	51.5	87.9
F				13989	*5979*	*690*	*NA*	110.1	92.8		47.6	NA
Mexico[6]	98.9	1.63	4410									
MF				14647	7252	531	433	112.0	96.6	85.0	64.0	89.4
F				7103	3529	NA	NA	116.9	NA		64.0	87.1
Nigeria[7]	111.5	2.39	310									
MF				*16191*	*4451*	*435*	*153*	70.3	NA	NA	33.2	57.1
F				*7135*	*2032*	*202*	*55*	65.1	NA		30.3	NA
Pakistan	156.5	2.77	450									
MF				16645	NA	NA	NA	81.3	72.4	49.7	NA	45.0
F				6540	NA	NA	NA	66.6	60.0		NA	32.6

Sources: columns a, b World Development Report; c,g,h,i,k UNESCO Decade of Education CD-ROM; d,e,f,j UNESCO Statistics Database/UNESCO Statistical Yearbook 1999.

1: c, g, h, I, k 1998 figures.
2: c 1999 figures; k 1996 figures; g 1998 figures.
3: c, g ,h, I 1998 figures.
4: d, f, j 1996 figures; c, g, h 1998 figures.
5: f 1996 figures; d, j, k 1995 figures.
6: d, e, f 1996 figures; g, h 1998 figures; j 1994 figures.
7: c, d, e, f, j 1994 figures; g 1996 figures; k 1995 figures.

PART 2
COUNTRY REPORTS

Bangladesh

Although Bangladesh is one of the world's poorest countries in terms of GNP, its constitution requires the state to move towards basic EFA citizens and the elimination of illiteracy. It has given the highest priority to basic education, extending compulsory education to the whole country and formulating a detailed strategy to be implemented in the country's five-year plans. In its national plan for education developed after 1995 and in the light of the Jomtien goals, it agreed on four national targets for 2000: to raise the gross enrolment rate at primary level from 76 per cent (1991) to 95 per cent; to raise the female gross enrolment rate from 70 per cent (1991) to 94 per cent; to reduce the drop-out rate at primary level from 60 per cent (1991) to 30 per cent; to raise the adult literacy rate from 35 per cent (1991) to 62 per cent. Beyond this, the government has committed itself to achieving total literacy by the year 2006.

Some recent figures show that Bangladesh has made significant progress towards these targets with a rapid growth in the proportion of the age group getting to school over the past decade. To increase social commitment along with education, several approaches have been used. These include social mobilisation through information, education and communication; sensitisation of stakeholders (social elites, opinion builders, parents, pupils of all ages); building partnerships with private philanthropists, community and non-governmental organisations; utilising facilities made available by religious institutions; forming local participatory committees (e.g. Village Education Committees); encouraging and supporting non-governmental organisations working at the grassroot level to promote people's participation.

Bangladesh is known world-wide for the remarkable work of the non-governmental organisations Bangladesh Rural Advancement Committee (BRAC), which provides a network of rural, alternative schools enrolling a significant proportion of the school-age group. The Grameen Bank has also made a significant contribution to education in rural Bangladesh.

Distance education projects

The documents on distance education are limited almost entirely to the work of the Bangladesh Open University. A Bangladesh Institute of Distance Education was established in 1983 with the prime responsibility of offering distance education courses for serving teachers, mainly at secondary level. It worked with ten teachers' colleges in running the programme. In 1985, when the course was announced, 12,000 applications were received for 3,000 places. The Institute was merged into the Bangladesh Open University on its foundation in 1992.

The university has four objectives. One of these is to meet needs in higher education through degree and diploma programmes but the three others are all relevant to basic education: to increase access, especially in rural areas, to basic secondary and vocational education; to raise the

BRAC began its operations in February 1972. Through pursuing its objectives of reducing poverty, supporting human development and improving the status of women, the non-governmental organisation has played an important role as a catalyst for development in Bangladesh. Although the emphasis of BRAC's action is at the individual level, it also endeavours to bring about change at the level of national and global policy on poverty alleviation and social progress. BRAC works with people especially women whose lives are dominated by extreme poverty, illiteracy, disease and other handicaps. With multi-faceted development interventions, BRAC strives to bring about a positive change in the quality of life of the poor people in developing programmes socially, financially, and environmentally sustainable, using innovative methods and appropriate technologies.

Extending credit facilities together with capacity building became a cornerstone of BRAC's strategy to alleviate poverty.

The three core areas of BRAC's programmes are rural development, education and health. In addition, in recent years an urban programme has started. BRAC's Development Programme working in the rural and urban areas focuses on the socio-economic development of underprivileged rural women through access to credit, capacity development, savings mobilization, institution building and awareness creation. The Non-Formal Primary Education Programme provides education for the children of these women to meet their specific needs, while the Health, Nutrition, and Population Programme is aimed at addressing the health and nutritional status of women and children at the community and national level. Recently, initiatives were introduced to encourage continuing education and a learning society in rural areas (local libraries, sites for discussion, debates, courses, cultural events). Some organisations in South Asia, Africa and Central America are restructuring their primary education system based on the BRAC experience.

BRAC gives a great importance to capacity building at all levels including for local NGOs, monitoring, research and evaluation to improve the effectiveness of its interventions both at policy level and field implementation in getting valuable feedback, analysis and data on programme implementation and impact.

quality of education through instructional technology; and to strengthen informal and non-formal programmes. The university has therefore launched a Bangladesh Open School and offers programmes for the secondary-school certificate. In 1995 it enrolled 14,247 students on courses for this qualification. The university also supports basic education through its work on teacher education (regarded within Bangladesh as part of higher education rather than being the responsibility of those guiding basic education) and through work for extension agents. Early results show that the university was achieving satisfactory completion rates with a graduation rate in 1996 of 48 per cent for its B.Ed. programme, a figure that was expected to rise as students within the cohort completed their work. The university also has plans to launch broadcast-based programmes to improve community understanding of scientific, environmental and agricultural issues.

Other national activities related to distance education are the work of Radio Bangladesh, whose origins go back to 1939 and which now broadcasts 166 hours per day through 4 channels and 8 broadcasting stations. Bangladesh Television devotes just over six hours a week of broadcasting for non-formal education and 3 hours for the Open University.

Achievements

Bangladesh has significant achievements in education. Enrolment ratios have increased substantially over the last decade accompanied by a narrowing of the gender gap. In distance education specifically, the major achievement has been the establishment of an open university as a dedicated distance-teaching institution whose functions include a wide range of target audiences.

The Grameen Bank (Grameen means "rural" or "village" in Bangla language (GB)) is a bank that provides credit to the poorest of the poor in rural in Bangladesh without any collateral. It adopts the view that credit is a cost-effective weapon to fight poverty and serves as a catalyst in the overall socio-economical development of the poor who have been kept outside the banking orbit on the ground that they are poor and hence not bankable. GB has reversed conventional banking practice by removing the need for collateral and created a banking system based on mutual trust, accountability, participation and creativity.

The origin of Grameen Bank can be traced back to 1976 when Professor Muhammad Yunus, Head of the Rural Economics Programme at the University of Chittagong, launched an action research project to examine the possibility of designing a credit delivery system to provide banking services targeted at the rural poor. It clearly demonstrated its strength in Jobra (a village adjacent to Chittagong University) and some of the neighboring villages. Then, the project was extended to several districts in the country until October 1983 when the Grameen Bank Project was transformed into an independent bank by government legislation.

It is now the largest rural finance institution in Bangladesh. It has more than 2.3 million borrowers, 94 percent of whom are women. Loans are small, but sufficient to finance the micro-enterprises undertaken by borrowers such as rice-husking, machine repairing, purchase of rickshaws, buying of milk cows, goats, cloth, pottery etc. Grameen Bank credit delivery system has the following features:

- ▷ There is an exclusive focus on the poorest of the poor;
- ▷ Borrowers are organized into small homogeneous groups;
- ▷ Special loan conditionalities which are particularly suitable for the poor determined by a preliminary survey of the social background and prospects (clientele, activities);
- ▷ Simultaneous undertaking of a social development agenda addressing basic needs of the clientele for a sustainable development;
- ▷ Design and development of organisation and management systems capable of delivering programme resources to targeted clientele;
- ▷ Expansion of loan portfolio to meet diverse development needs of the poor.

The repayment rate on loans is currently – 95 per cent – due to group pressure (the collective responsibility of the group serves here as the collateral on the loan) and self-interest, as well as the motivation of borrowers.

Grameen Bank's positive impact on its poor and formerly poor borrowers has been documented in many studies and had also inspired people and institutions throughout the world with its success in poverty alleviation.

Challenges

Major national challenges arise from the continuing large number of illiterates especially the large proportion of illiterate rural women. The two main challenges for distance education are first, to develop structures that ensure that the non-formal programmes of the Open University are effective for scattered, under-educated, rural populations; and second, given the dramatic achievements of both BRAC and the Grameen Bank in rural education and the support of rural people, to explore ways in which distance education can be used in association with the non-governmental organisations sector. There may be a third challenge in expanding and strengthening programmes of teacher education, an area on which the available documentation provides limited information. Despite the concentration by the Open University on secondary-level teachers, there may well be demands to upgrade and raise the capacity of primary-school teachers in the same way. ■

Table 2. Major Distance Education Projects in Bangladesh

Audience/Purpose	Project/Institution	Date	Scale	Outcomes
Children and adolescents in school	*Radio Bangladesh*	1939-	4 channels 166 hours per day	NA
Out-of-school and marginalised children and adolescents	*Bangladesh Open University*	1995-	NA 14,257 enrolments (1995)	Programmes on agriculture, health, culture. Secondary-school certificate programme.
Adult basic education *(equivalence programmes and non-formal education)*	*Bangladesh TV*	NA	6 to 3 hours per week	NA
Teacher education	*Bangladesh Institute of Distance Education (now incorporated into BOU)*	1985	300 students	B.Ed. for secondary school teachers
	Bangladesh Open University	1992-	21,236 enrolments (1995)	B.Ed.
Health worker education		NA	NA	
Agricultural extension agents	*Department of Agricultural Extension*	NA	NA	Agriculture diploma
Distance education infrastructure	*Access to radio and television channels*	NA	4 radio channels, with 17 hours per week for education, 1 TV channel with 12 hours per week for education.	

Sources: Country Paper 1999; Sirajul Islam, 1998; Rumble, 1999.

Brazil

Brazil produced a ten-year Education for All Action Plan for the 1993-2003 period. This was further strengthened by three legal measures. In 1996, a constitutional amendment reorganised basic education funding to "improve equity and earmark more resources to education" (UNESCO, 2000, p. 8). In 1996, new *Lei de Diretrizes e Bases da Educação* (LDB), introduced procedures for evaluating educational outcomes at all levels. A new national education plan in 1998 identified clear targets for the new decade.

These legal documents reflect new emphases given by the federal government and many state and local governments to the improvement of educational statistics, new national and regional assessment procedures and the growing participation of community and business sectors in educational matters. Generally, the government, at all levels, has taken direct responsibility for the management and quality of the formal education sector and given responsibility for adult literacy to voluntary and non-governmental organisations. University education is provided by either the federal government or private institutions.

The EFA goals in particular areas are unclear in the literature available but are likely to have had distinctive emphases. In the early 1990s, Brazil was nearing universal access for children (90 per cent net enrolment rate) but considerable challenges remained in certain areas: reducing drop-out rates (60 per cent drop out before the first four grades); reducing repetition and failure rates (only 25 per cent successfully completed the four grades); and providing formal education to children in poor and remote areas and those from linguistic and cultural minorities.

Brazil[1] has one of the lowest survival rates at the fifth grade of all E-9 countries. This high drop-out contributes to severe challenges in adult illiteracy (UNESCO, 2000, p. 25). Some 35 million adults in Brazil lack basic education. Most illiterates are concentrated in the older age groups and poorer regions. Some official figures (1992) show that 17.7 million illiterates are older than 15 years old but only 4.1 million have a job. Among the employed, 18 million had barely eight years of fundamental education in 1992 and only 14 per cent finished secondary education; 38 per cent of industrial workers in São Paulo – the most industrialised centre of the country – had left school in the course of their secondary education (de Paula Guibert, 1999, p. 189).

Distance education projects

Brazil has a long tradition of using distance education, particularly in radio and television broadcasting. The Brazilian pioneer Roquete Pinto was instrumental in promoting a range of broadcasting projects that directly led to the creation of state educational television networks in the late 1960s and early 1970s. A recent survey on distance education experiences in Brazil (Abreu, 1999) reflects how receptive Brazil is to distance education. It lists over forty small- and large-scale distance education projects in operation, catering for a wide-range of levels and audiences. Over 94 per cent of the public have electricity, 90 per cent have radio receivers, 87 per cent have television sets and 32 per cent have telephone lines. Brazil also has a relatively high teledensity compared to other Latin American countries. It is anticipated that 17 per cent will be connected to the Internet by the end of 2000 e.g. 20 million potential users.

[1] and Pakistan.

In this decade, the value of distance education has been formally recognized in the Ministry of Education by the establishment of the Secretariat of Distance Education (SEED) which has initiated various distance education programmes: *School television* by satellite; the *Proformação*, teacher training programme; National *Programme for Informatics in Education* (*Proinfo*) which introduces computers and informatics to public elementary schools. Table 3 provides an incomplete sketch of known projects for which more descriptive and evaluative data is required.

There is a strong tradition within non-governmental organisations in Latin American countries towards the production of alternative videos for development work among a wide-range of beneficiaries, often in the marginalised urban sector. These are studied in video forums led by monitors and supplemented with print materials. One example is *Televisão dos Trabalhadores* which centres on political, democracy and trade union education with the video forums held in trade union training centres throughout Brazil (Dodds, 1996). These alternative non-governmental organisations approaches are a reflection of the strong pluralist nature of these countries and the ways in which various Roman Catholic Church agencies tend to operate in small-scale, tightly targeted ways. They also reflect the influence of Brazilian educationalist Paulo Freire. His emphasis on dialogue and concern for the oppressed have promoted the use of a range of discussion forums in which educational activity is situated in the everyday experience of participants.

Telecurso 2000 is the largest pre-tertiary distance education programme for adults in the world. It was started by an industrial consortium[1] and the Roberto Marinho Foundation (FRM) which is the education branch of Globo television, Brazil's largest television network and the world's fourth largest network. The industrialists contributed US$ 30 million to produce a new educational programme to improve the low schooling levels of their workers. Globo offered to broadcast it free and also donated the equivalent of 60 million US dollars of television time to promote the project.

Telecurso 2000 is primarily designed for young people and adults already working but who lack basic education altogether or who dropped out early from formal education. Using a mixture of television, printed materials and tutoring, the programme provides courses at 3 levels – primary, secondary and vocational – with progression through them dependent on exam success. Each primary and secondary strand is 18 months long, organised into 3 semesters. The primary covers 6 subject areas in 360 television classes, takes 18 months and corresponds to the last 6 years[2] of the formal-primary system; the second covers 8[3] in 420 television classes and is equivalent to the 3 years of formal courses. There are 17 modules in the vocational course, covering basic metal mechanics[4] in 360 television classes. Each strand provides a "condensed version of a basic curriculum" but contextualised for adults (Castro, 1999, p. 21). It draws on real-life situations and incorporates citizenship and job-oriented education.

Students participate on the course in one of three ways. The first, known as organised reception, is made up of study groups enrolling in a *telessalas* (usually in schools, trade unions and community centres). The group meet up for 2 hours every day with the tutor and each *telessala* is

[1] The Federation of Industries in the State of São Paulo (FIESP).

[2] Portuguese, Math, History, Science, Geography, English.

[3] Science becomes differentiated into Physics, Biology and Chemistry.

[4] This "covers about 70 per cent of all occupations in Brazilian industries and thus has a very high potential of immediate application" (de Paula Guibert, 1999, p. 192).

equipped with a television set and reference books. In the second, called controlled reception, the student watches television lessons alone and then meets once a week in a tutored group. The third option – free reception – is self-study.

Figures for enrolments pass rates and costs appear below in Table 3 although it is early still too to assess them. The initial investment of 43 million US dollars is overshadowed by the larger recurrent costs of teachers. Costs are therefore comparable to regular schools but could be reduced by cutting teacher hours and obliging students to watch some of the television classrooms on their own. The programme reaches an impressive number of students. In 1999, 200,000 attended *Telecurso* classes but an unknown number study independently. What is known is that 5.2 million accompanying texts were sold or distributed between 1995-99. The programme also has incidental viewers: a recent survey suggested that 7 million people watch the programmes (de Mauro Castro, 1999, p. 23) and there is evidence of its growing use in regular schools (ibid.).

Pass rates "do not differ much" from regular schools but there is no present means to "distinguish the achievement of *Telecurso* students in the national examinations" (de Paula Guibert, 1999, p. 198). In 1997, there were 47,679 candidates for the basic disciplines. The Portuguese-language exam at basic level had 18,208 candidates and a 45 per cent pass rate. The math test had 15,726 candidates and a 32 per cent pass rate. Pass rates at secondary level were generally low: Portuguese language (15%), Math (5%) – apart from Chemistry (40%). Areas identified for improvement include further training for tutors, who currently get a three-day induction, and the integration of evaluative procedures.

Challenges

Low public expenditure on education (2.28 per cent of GNP in 1989-95) reflects the country's economic difficulties but also the lack of sustained political commitment. A recent report (Abreu, 1999) suggested that the scattered responsibilities for education have created disparities in access to basic education and difficulties in defining and achieving goals in a systematic way. Providing formal education to children in poor and remote areas and from linguistic and cultural minorities appears to remain a substantial problem. Three and a half million children from 7 to 14 still do not have access to formal education.

Future plans for development in EFA areas

The Cardoso government drew up a new National Education Plan that was passed for approval by the National Congress in 1998. This established clear targets for the new decade and attaches great importance to distance education.

The concept of lifelong learning has become central to the new plans (Abreu, 1999, p. 15). There is a new emphasis on early education programmes and Information and Communication Technologies (ICTs) is clearly viewed as crucial to the democratisation of access to educational resources (info libraries in community centres and new lifelong learning distance education national database are particular strategies). The integration of communication technologies into schools and universities is a central focus. This is accompanied by new teacher-training initiatives in the use of new technologies and the development of 365 virtual managers (e.g. the *March Forward Brazil* programme).

Abreu argues that real progress can only be made if the government plays a more decisive and co-ordinating role in distance education and in forging new collaborations between governments at different levels, universities, industry and non-governmental organisations. ■

Table 3. Major Distance Education Projects in Brazil

Audience/Purpose	Project/Institution	Date	Scale	Outcomes
Children and adolescents in school	*Brazil School Radio*	NA	NA	NA
	Programme for Informatics in Education	NA	NA	NA
	TV Escola	NA	NA	NA
Out-of-school and marginalised children and adolescents	*Distance secondary education*	NA	NA	NA
Adolescents and adult basic education *(equivalence programmes and non-formal education)*	*TV dos Trabalhadores*	1986-	Trade-union training centres throughout Brazil	3 packages each of 15 short video programmes in political, democracy and trade-union education. Self-study books for use by monitors and students in video forums. Study groups led by monitors, in trade-union training centres throughout Brazil[d].
	Telecurso 2000	1994-	150,000 enrolments in 1996[b] 80,028 students in 1997, 3,264 telessalas[a] 200,000 in 1999 5.2 million books sold 1995-99[c]	TV-led programme on 3 levels: primary, secondary and vocational; study groups (*telessalas*) led by trained facilitators. 1996 – 47,679 total candidates (in different primary subject areas). 18,208 candidates in Portuguese – 45% pass rate, Math 15,726 – 32%. Secondary level: Portuguese (15% pass), Math (5%), Chemistry (40%)[a]. Cost per student US$ 14. Production costs US$ 43.4 million (US$ 10 per student). Production + teachers costs (US$ 400 per student) Costs of telessalas met by interested party (union, company). Revenue from selling of videotapes (US$ 16) and books (US$ 5)[a]. 7 million incidental viewers and 200,000 students use it in regular schools.
Teacher education	*Programa TV Escola*	1997	900,000 teachers	NA
	Formação de Professores Indigenas	2000	NA	NA
	Proformação	2000	NA	NA
Distance education infrastructure	*Information Society Programme*	NA	NA	Creation of info libraries in community centres.

Sources: a de Paula Guibert, 1999; b Yates, 1998, pp. 29-30; Castro, 1999; Dodds, 1996.

China

Distance education in China started in the 1950s in the form of correspondence education. By the 1970s, radio and television universities and colleges had become widespread throughout this vast country. The framework for satellite education became established in the 1980s (Hayashikawa, personal communication, 2000). From then on the Chinese government has attached great importance to using broadcast-led distance education. In the 1990s a series of initiatives inspired by Jomtien resulted in an expanded role for distance education in China. New EFA goals included a shift from the (nearly achieved) universal primary education to universal nine-year compulsory schooling by 2000 and to increasing access to disadvantaged young and adult groups left out of school in the past. To push through these goals, the Chinese government created new distance teacher-training initiatives, underpinned by a succession of international and national action plans and legal statements[1], and invested heavily in modernising and expanding its satellite and television education infrastructure – see Table 4 below.

Distance education projects

China's use of distance education needs to be seen within the context of its experience in using distance education at tertiary level. In 1978 the State Council approved the establishment of the China Central Radio and Television University (CCRTVU) with 28 Provincial Autonomous Regional and Municipal Television Universities (PRTVUs). By 1990 this television-university network had already produced 2.31 million graduates and according to 1996 official figures "1.4 million or 24.4 per cent of its 5.8 million students in higher education were studying through distance education" (Perraton, 2000, p. 85). Within CRTVU, The Television Teacher Training College has been responsible for providing multimedia training and upgrading programmes for primary and secondary teachers since 1986. The programmes are distributed via satellite, terrestrial television and are also available in videocassette form. The Liaoyuan television and Broadcasting School provides vocational and technical education to rural communities.

Achievements

Some figures dated 1998 (UNESCO, 1999e) report that between 1980 to 1997, Chinese teacher training institutions – both face-to-face and distance teaching – produced 6.49 million newly trained teachers for primary and secondary schools. Distance education alone assisted 4.82 million teachers to upgrade their qualifications to the prescribed standards: 94.5 per cent of primary teachers (50 in 1980); 83.4 per cent of secondary teachers (12 in 1980); 63.5 per cent of senior secondary teachers (38 in 1980). The new *Satellite Television Teacher Training Programme*, started in 1990, has attempted to bring training and upgrading to teachers in a range of different remote and minority areas. By 1996, in the Aohan County, for example, the initiative produced one thousand and twelve new teachers and upgraded teachers to prescribed levels – primary 95 per cent (from 69 per cent) and secondary up to 63 per cent (from 15.6 per cent).

[1] Such as the E-9 Distance Education Action Plan (1994, Geneva), the UNICEF Distance Education Project (1990), the State Project for Compulsory Education in Poor Areas (1996), the Action Plan for Invigorating Education for the Twenty-first Century (1998), The Modern Distance Education Project (2000).

As a result of successive investments, the scale and structure of the national satellite and distance education network is impressive. In 1999, there were 3 satellite channels in China responsible for 49 hours of educational programming per day. CCRTVU alone offers 529 courses in 55 disciplines and 9 fields. In 1999, TVU consisted of Central CCRTVU, 44 PTVU's and over 690 branch schools at prefecture and city level, 600 study centres at county level and 13,000 teaching classes. One strength of the system is that it operates at different levels – central, prefecture and local levels – each with different degrees of responsibility and autonomy. Apart from the general enrolment and examining administration, prefecture and local levels are also responsible for producing multimedia materials for courses of regional or local interest and therefore contribute to local educational and economic development.

Another strength is the degree of national commitment to distance education in terms of hardware and dedicated air space. Apart from the China Education Television Station (CETV), "14 provincial governments, 107 prefecture level governments and 500 county level governments established their own education television stations, in addition to the 16,000 relay stations and 66,000 township resource centres. 75 per cent of the cable television stations across the country receive and transmit CETV" (UNESCO, 1999, p. 7). The China-UNICEF *Distance Education Project* initiated in 1990 has successfully extended the distance education network to underserved remote and minority areas, such as the Luxi County in Yunnan. This involved the construction of 3 education relay stations, 12 satellite receiving stations, a 108 satellite-programme-broadcasting centre and a cable network broadcasting 2 CETV channels.

Since 1994, various ICT projects have appeared. The *Chinese Education and Research Network (CERNET)* makes computer links between campus universities and institutes. The *Application of Modern Educational Technology Project* aims to introduce computers and the Internet into schools. Another project (*CETV Distance Education Programme*) is piloting the introduction of a dual-direction transmission system (sometimes called interactive television). These projects have laid some of the groundwork for the more ambitious *Modern Distance Education Project* initiated in 2000 that aims to integrate ICTs in the distance system. A key aim is to rationalise and modernise the existing national (computer and satellite-based video transmission) distance education network so that it operates as a multi-media, multifunctional, multi-standard system.

Challenges

Extending basic education to remote, poor and minority-inhabited areas is acknowledged as an area for improvement for both children and adults. In these areas – mainly the western region of China – 2.7 million primary school-age children are not enrolled in primary schools and primary enrolment is below 70 per cent in 38 counties and 95 per cent in 178 counties. There are also 145 million illiterate adults, again mainly in these areas, 37 million of which are 15-48 years old and 70 per cent are women. Recruitment and retention of teachers in these areas is low, the distribution of primary school teachers uneven and the quality of secondary school teachers insufficient.

Other general areas include: the need to further train teachers and children particularly in terms of preparing for ICTs and new teaching methodologies, the development of software, more educational research and evaluation and the improvement of the educational management system.

Future plans for development in EFA areas

The 1999 Action Plan for Invigorating Education to the Twenty-first Century has embraced some of these challenging areas and also builds on the expected universal nine-year compulsory education. It places an emphasis on further upgrading teaching quality (*Project on Teacher Training for the Twenty-first Century*), working towards the expanded notion of lifelong education and an open-learning education network (the *Modern Distance Education Project*). ■

Table 4. Major Distance Education Projects in China

Audience/ Purpose	Project/ Institution	Date	Scale	Outcomes
Children and adolescents in school	*China TV Teachers' College*	1986-97		8+ hours per day of broadcast programmes for primary and secondary schools, e.g. English Class on the Air.
	CETV DE Programme – interactive TV	1998-	Pilot stage of nation-wide project	English language programmes for schools including on-line discussion with specialist teachers.
	Application of modern educational technology project	1997	Pilot stage	Of 2,000 Beijing schools, 500 have TVs, 150 Internet-connected computer rooms, 50 with computer facilities, 5 with school websites.
Adult basic education *(equivalence programmes and non-formal education)*	*Liaoyuan TV and Broadcasting University (satellite-based TV programmes)*	1986-97	150,000 rurally-based adults trained p.a., 137, 500 of whom become qualified agricultural workers (Green Certificate).	2,000+ hours of training materials on practical rural vocational and technical skills.
Teacher education	*China TV Teachers' College*	1986-97	2 million new primary and secondary teachers; 4.82 million upgraded.	14,000 hours+ of teacher training broadcast materials, 20+ hours per day devoted to teacher training.
	Satellite TV Teacher Training Programme specifically to train teachers in remote and minority areas	1990-	e.g. by 1998, 1,518 new graduates, 784 lower, 164 senior primary teachers upgraded in Xiangshou County.	FT teacher qualification rate up from 21.3% to 88.6%.
Expanding and improving distance education infrastructure	*Education Technology Centre Project*	1978-	200,000 employed to run centres.	Education Technology (or DE) Centres established at provincial, prefecture and county levels.
	UNICEF/Government of China Distance Education Project	1990-	e.g. Luxi County in Yunnan Province - 3 education relay and 12 satellite receiving stations, 108 satellite-programme broadcasting centres, a cable network (broadcasting 2 CETV channels).	Covers 85% of total county population, providing access to range of formal/ non-formal DE programmes for teachers, schools and wider community.
	China Education and Research Network (CERNET)	1994		Establishment of national and regional educational computer network, connecting 150,000 computers (or 500,000 users) in 70 cities and 500 universities and schools.
	Modern Distance Education Project	2000		Aims to integrate ICTs into and rationalise the structure of existing national distance system (i.e. CERVET and satellite-based video transmission network) to produce a multi-functional, multi-standard national system and lifelong learning capacity.

Source: UNESCO, 1999.

Egypt

The Egyptian government has repeatedly emphasised the importance of education in preparing their citizens for the demands of a modern technologically enhanced information-based society. Their EFA goals reflect this emphasis alongside more general aims in reducing illiteracy, expanding and upgrading the teaching force and improving the quality and range of educational provision.

Distance education projects

There are no detailed studies of past or present distance education initiatives in Egypt. The lack of a culture of research and documentation in Egypt limits us to an impressionistic understanding of the field. This is regrettable as there have been interesting and valuable projects in support of basic education and we could learn from this experience. More seriously, as Fergany (1999, p. 3) implies, this lack of research acts as a direct constraint on the development of distance education and commitment to it, notably on the part of funding donors. This gives "added urgency to the fundamental tasks of thorough documentation and rigorous evaluation of distance education activities" (ibid.).

Table 5 below provides an incomplete sketch of known projects that, among others no doubt, incorporate some component of open or distance education. Fergany (ibid.) points out that only the directed teacher education could be considered as an example of distance education used as a complete alternative to mainstream provision. Other projects make some use of distance education and are "considered as contributions to multi-channel education, i.e. complements to traditional education" (Fergany, 1999, p. 3).

Nevertheless, what emerges from even these sketchy details is the sense of importance being attached to the use of new technologies in the government's overall educational planning. At a recent national seminar[1], the Minister of Education emphasised three new "flagship" activities: the provision of *computer equipment to schools*, the establishment of *dedicated satellite educational television channels* (four of which are earmarked for basic education) and a *videoconferencing network* in teacher training. As part of the school activities, one project is dedicated to improving the use of ICTS in high school mathematics and science teaching. Since the World Education Forum in Dakar in 2000, there is to be a general drive to improve science and technology education at all levels, inside and outside school with ICTS playing a key role in expanding the opportunities for formal and informal learning in this area. *The International Computer Driving Licence* (ICDL) aims to help teachers establish basic computer literacy standards and to integrate ICTs into teaching.

Two other high-profile ICT projects focus on the establishment of open-access resource centres. The UNDP-sponsored *TACCs* (Technology Access Community Centres) aim to provide community access to the Internet and other educational resources including distance education, telemedicine and environmental information. *TACCs* also serve as hubs for the development of electronic content in Arabic and as training centres for various groups, including trainee teachers and low-income groups. *The 21st Century Kids Club* is an non-governmental organisation-managed[2] project

[1] 22nd February, Ministry of Education, Cairo.

[2] Integrated Care Society.

to establish a national network of children's resource centres. Since 1997, 39 clubs have been established, each with about 20 PCs and libraries of software and books.

Radio and television seem to be well exploited for educational purposes. There is a well-established tradition of using both types of broadcasting for three audiences: literacy and adult education, basic education and teacher training. The new dedicated satellite channel will make this an area ripe for development.

Achievements

Generally there is a very low teledensity in the Middle East and Maghreb Arab countries for two main reasons. First, outside the petro-monarchies of the gulf, few countries have the technical or economic means to develop the telecommunications infrastructure for use as information highways. Secondly, the Internet is an area of political hesitation. It is viewed as a direct challenge to the traditionally monopolistic control which most Arab government exercise over the communications system. The majority have tried to apply control systems or left prohibitive Internet Service Provider (ISP) rates to do the job for them.

The Egyptian government has taken a different route. Service providers there are as often public as private. The government took the initiative by "subsidising the university link-up, and, the number of internauts is progressing rapidly" (Boukhari, p. 2). This open stand, which perhaps stems from a long-standing press tradition, is reflected in both the number and type of ICT projects in education. Walk-in resource centres like *TACCs* and the *21st Century Kids Club*, appear to signal a commitment to a civic openness and the notion of lifelong learning.

A recent UNESCO report (2000a, p. 78) states that the illiteracy rate has been reduced from 49.6 per cent in 1986 to 38.6 per cent in 1996. We are unclear whether distance education has contributed to this success.

Challenges

The emphasis placed by the Egyptian government on new technology projects inevitably gives rise to questions about disparities in access to basic education. Are educational resources being diverted away from rurally-based children with minimal, if any, basic education provision? Are the benefits that flow from ICTs widely accessible to a range of basic education learners?

One key question is how far the Egyptian government can move beyond the issue of access and create initiatives to position Egyptians, perhaps even the wider pan-Arab world, not just as passive consumers of information produced elsewhere but active providers of information (in Arabic, English and French). ■

Table 5. Major Distance Education Projects in Egypt

Audience/Purpose	Project/Institution	Date	Scale	Outcomes
Children and adolescents in school	*Radio schools broadcasting*	NA	NA	NA
	TV schools broadcasting	NA	2 dedicated satellite channels	NA
	Provision of computer equipment to schools	1998	NA	NA
	Internet connection	1998	10,470	
Out-of-school and marginalised children and adolescents	*Videotapes and CDs for independent learning* produced by the Ministry of Education	NA	NA	NA
	21st Century Kids' Club	1997	39 clubs, access for 8,500	Children's resource centres with software and traditional library facilities, Internet connectivity. 20 PCs in each club and approx. 100 software programmes. 1 club in each district by 2000.
Adult basic education *(equivalence programmes and non-formal education)*	*Radio Literacy*	1960s	NA	
	TV Adult Education	1963	On 8 local channels and 1 satellite channel	
Teacher education	*Interactive radio instruction (English language)*	NA	NA	
	Distance teacher upgrading course	NA	100,000 by 1996	
	Education modules (environment and population education)	NA	NA	
	Videoconferencing – linking teachers' colleges	NA	29 nodes, 124 programmes, 168,000 targeted participants in 12 months to mid-1998.	
	International Computer Driving Licence (ICDL)	1999	5 accredited training/testing centres.	Pilot phases being evaluated
Distance education infrastructure	*Dedicated educational satellite channels*	NA	4 TV educational channels, 1 for literacy and adult education, 2 for primary and junior-secondary education, 1 for teacher training.	
	Technology Access Community Centres (TACCs)	1999	3 pilot Tacos in Governorate of Sharkeya, 10 PCs + Internet + training.	

Source: Fergany, 1999.

India

The World Declaration on Education for All and the Framework for Action to meet Basic Learning Needs (Jomtien, 1990) were considered by the Indian Central Advisory Board of Education as a reaffirmation of their existing policy orientation given to elementary education in the National Policy on Education in 1986 (UNESCO, 2000, p. 9). These goals were incorporated into successive five-year plan proposals, the latest being the ninth five-year plan which operates from 1997-2002. India has therefore integrated EFA objectives into a policy framework which guides all educational initiatives at the state level. There were five main EFA challenges: (1) access to basic education for unreached sections of the population, (2) more community participation in education, (3) effective management structures, (4) improvement in the quality of formal systems through innovative teacher education programmes, (5) a National Literacy Mission with a target of making more that 100 million in the 15-35 age group literate by 1999.

The government adopted particular strategies to achieve these goals, including a greater involvement of non-governmental organisations in non-formal community education programmes. This was also part of a general move towards decentralisation of planning and management to make provision more responsive to local needs. The government also raised the percentage of public expenditure on education to 6 per cent. Another strategy was to attempt to create better links and integration between pre-school, primary education, non-formal education and adult education as well as integrating general healthcare and environmental issues into a broader spread of educational programmes.

Distance education projects

In the 1990s, there was a significant expansion of non-formal education (NFE), which in India covers out-of-school children and adult education. In 1997 there were 279,000 NFE centres educating 7 million people in 21 states. Most – some 241,000 – are run by the state but some 86 per cent (38,000) are run by 544 non-governmental organisations or voluntary agencies.

One commonality amongst this wide range of educational providers is the flexible nature of the programmes they offer – condensed and part-time courses, village community locations and decentralised management. This flexibility is geared to accommodate local needs such as child labour and family duties and is designed to provide education that is equivalent to, though not the same as, that offered in formal settings. The certification of these programmes provides an entrance route into formal education.

One large-scale example is the *National Open School* (NOS) which provides an alternative route to schooling for disadvantaged groups such as women and girls, scheduled castes and tribes, rural and urban poor and the unemployed. The school offers four different types of self-instructional programmes in English and Hindi: secondary, senior secondary (10-12th grade) bridge course (around grade 8) and vocational courses (free-standing or combined with academic courses).

A NOS student at the secondary level can choose home science and business studies, in addition to Mathematics, Science, English, Social Studies, or Bakery and Confectionery. At the senior-secondary levels, a student may choose subjects, such as political science, chemistry, or furniture and cabinet making. The learning resources are made available in the form of printed self-learning

materials and magazines, personal contact programmes (PCPs), audio and video programmes and some television broadcasting. The courses are offered in English and a variety of local languages.

There are no formal entry requirements for the NOS programmes (except at senior-secondary level) and the range of courses and freedom to select is often better than in many schools. The courses are distributed to students who attend classes or Personal Contact Programmes at study centres, generally within a regular school. Thus the OJS benefits from an existing school network to serve its students and enriches it by bringing in facilities not normally available to the schools.

By 1998-99, NOS had 1,030 study centres, 812 Accredited Institutions (AIs), 14 Special Accredited Institutions for the Education of the Disadvantaged (SAIED), 204 Accredited Vocational Institutions (AVIs) and 8 regional centres. Annual enrolment grew from 34,800 in 1991 – 22 to 130,000 in 1998-99 with 61 per cent of students following secondary courses and 37 per cent of senior secondary courses. When compared to the 68 million in formal secondary school in 1996, this enrolment seems insubstantial (0.6 per cent of learners). Nevertheless, the chairman, speaking in 1995, predicted that open school methods would be used to reach 40 million students in sixteen languages within ten years.

Recent OJS completion rates were 26 per cent of junior secondary and 23 per cent of senior secondary but this compares to 70 per cent and 76 per cent in regular schools. The gender proportion within NOS is biased towards males (62.7 per cent versus 37.3 per cent). 33 per cent of their enrolments come from marginalised groups.

The Open School's income is derived from students' fees and the sale of books and materials. Currently learners pay 200 Rupees (Rps) (US$ 4.40) for the Foundation course, Rps 800 (US$ 18) for the Secondary course, and Rps 925 (US$ 21.28) for the Senior Secondary course. There are concessionary fees for handicapped students, ex-servicemen and members of scheduled castes and scheduled tribes. The cost per learner is US$ 10 and per graduate US$ 92. This compares to a cost per learner of US$ 40 in formal primary and US$ 44 in formal secondary (Edirisingha, 2000, p. 10).

At the moment NOS works from the lower secondary level but now proposes to introduce the *Open Elementary Education* programmes for out-of-school children of school-going age. The NOS has also recently launched the *Open Basic Education Project* at primary and upper primary level which will create a progression route into school education through the open schooling channel. There are three levels – preparatory (A) primary (B) and elementary (C), which are equivalent to formal school standards III, V and VIII. NOS is also planning the development of special education schooling and developing computer networking links between existing open schools. It is also producing open learning materials in the area of Education in Human Values for teachers involved in the Personal Contact Programme of NOS. This is for two types of teacher: those handling junior and senior secondary and those involved with non-governmental organisations. The materials consist of comic books, self-instructional print material and videocassettes. The dedicated television channel of Gyan Darshan is also used for the broadcasting of visual materials and negotiations are being initiated with All India Radio for broadcasting of the audio materials.

As part of the *Special Orientation for Primary Teachers* programme, the National Council for Educational Research and Training (NCERT), The Indira Gandhi National Open University (IGNOU)

and the Indian Space Research Organisation have initiated several in-service teaching training courses using interactive video technology. Studio-based educators make live one-way video presentations about different teaching areas – aided by pre-recorded video-clips – to groups of teachers in different sites. These teachers engage in the particular subject area both before and after the broadcast through print materials and activities produced centrally by the twenty-strong course team but mediated at the local level by trained facilitators. Activity sheets are produced in the language of the participants. The teachers can ask direct questions to the educators through telephone and fax links. The approach uses satellite transmission for the one-way video and two-way audio interaction, the production of video-clips, computer systems, cable television, telephone and radio and television broadcasts.

In 1996 in Karnataka State, NCERT ran three seven-day pilot training courses for primary school teachers in 20 different district training institutes. In all, 300 teachers and 255 locally-based facilitators took part in the project. The second took place in Madhya Pradesh at 45 district training institutes. There was a third pilot in Karnataka aimed exclusively at Mathematics teachers that included help with teaching mathematics and to improving the trainees' knowledge of the subject. The fourth pilot ran courses for teacher facilitators in all the District Institutes of Education.

Achievements

One substantial factor in educational achievement in India was a change in the pattern of expenditure in education. There was a significant shift in the proportion of funds spent on elementary education in comparison to secondary and tertiary education. Within that funding a large proportion went towards expanding and improving school infrastructure, the recruitment of new teachers and teaching supplies.

A third of the world's non-literate people live in India – 200 million in 1991, the majority of whom are female and living in rural areas. Nevertheless, India succeeded in raising the level of literacy in the "EFA decade" (1990-2000) from 52 per cent in 1991 to 64 per cent in 1997. This also included an 11 per cent rise in female literacy, compared to 9 per cent among males.

150 million children in the 6-14 age group were enrolled in school during the decade. This represented a 90 per cent enrolment rate. There was also a substantial expansion of primary and upper primary schools. 27,000 new schools were established between 1991-92 and 1996-97, leaving only 6 per cent of the rural population living more than one kilometre from a school. Under a programme called the *Education Guarantee Scheme* (EGS), the Indian government guaranteed to provide a school for any community with at least 25 school-age children. Of the 19,289 schools that were created under EGS up to September 1998, 10,325 (54 per cent) were in tribal areas and reflected successful targeting of socially deprived groups.

The number of teachers increased during the decade to at least two teachers per primary school. Between 1990-91 the number of teachers in the lower primary levels grew from 616,020 (85.25 per cent trained to required levels, 29.24 per cent of them female) to 1,871,542 (87 per cent trained and 34.34 per cent female). In the upper primary school level, the numbers grew from 1,072,911 (88.02 per cent trained and 33.24 per cent female) to 1,211,803 (88 per cent trained and 36.08 per cent female).

Challenges

India's rising population and massive number of illiterate people remain daunting challenges. Now that the population has crossed the one billion mark, trying to make the literacy rate keep pace with the population growth rate will become an unmanageable task. The rising population sets up an increasing demand for schools and creates difficulties in overcoming what are becoming entrenched disparities between rural and urban areas, different social groups and among different geographical regions.

Future plans for development in EFA areas

The New National Campaign for EFA has set new targets for the coming decade: (1) access to EFA children age 6-14 by 2003; (2) completion of five years of primary education by all children by 2007; (3) completion of eight years of elementary education by all children by 2010. As a result, the Indian government has pledged that a greater emphasis will be placed on introducing the concept of inclusive schooling into both regular schools and the distance mode. Groups singled out for special attention are those who have proved difficult to include in significant numbers and those who have remained outside the formal and non-formal network. These include women and girls, scheduled castes and tribes, working children, children with disabilities, children from minority groups and urban disadvantaged children.

One strategy to achieve this will be the promotion of alternative delivery systems – seasonal, voluntary, open school and camp-type teaching approaches for special groups. These will need to be accompanied by appropriate teacher training courses. Another future area for development is the improvement of management systems in basic education, with a particular emphasis on greater co-ordination in planning and convergence between the different providers. This will involve an increased role for non-governmental organisations.

The enrolment capacity of the open-learning system is to be expanded to bring vocational and academic opportunities to a wider section of the population. This will include a bigger focus on adult literacy programmes and ones that link in with established non-formal provision. Early childhood care and education is to be expanded and there is to be a focus on the improvement of quality in schools by investing in their infrastructure, expanding pre- and in-service teacher education and reviewing the content and methodology of teaching. ■

Table 6. Major Distance Education Projects in India

Audience/Purpose	Project/Institution	Date	Scale	Outcomes
Out-of-school and marginalised children and adolescents	*Open elementary education (National Open School)*	NA	NA	New equivalency programme for out-of-school children.
Adult basic education *(equivalence programmes and non-formal education)*	*The National Open School (NOS)*	1989	130,000 enrolled in 1998-99 from most states and Union Territories in India. 900 study centres, 8 regional centres.	Learner-selected courses in academic and vocational subjects at foundation, junior and senior-secondary levels. Targeting disadvantaged groups aged 14-89, the majority 18-24. NOS launched study centres in the Middle East, i.e. Dubai and Abu Dhabi. 6.5 million books produced in 1998-99. 140,796 certified students at junior-secondary level in 1998. Cost per learner US$ 10[b].
	Open Basic Education Project	1999		Equivalency programme for adults.
Teacher education	*NCERT's Special Orientation for Primary Teachers Programme and Programme of Mass Orientation of School Teachers*	1998	3,000 primary teachers. 255 facilitators.	Teleconferencing teacher-training programme using interactive video technology. Gives remote teachers access to a panel of specialist educators who make presentations about different teaching areas. Study group activities precede and follow broadcast. 7-day courses, 13 thematic areas explored. Achievement tests showed gains in skills[c].
	Diploma in Primary Education, Indira Gandhi National Open University (IGNOU)	NA	NA	In-service training
	Bombay Television Centre	NA	NA	20-min. programme, once a week, aim at improving knowledge and skills[c].
	Hints for Teachers, National TV	NA	NA	One 45-min broadcast a week raising awareness of innovations in teaching.

Sources: a UNESCO, 2000; b Edirisingha, 2000, p. 10; c Perraton and Creed, 1999, p. 55.

Indonesia

In the "First Long-Term Development Period Plan (1989-93)" the Indonesian government underlined the importance of shifting from an agricultural – to an industrial-based economy. Early child development and primary education were singled out as crucial for preparing citizens "to be actors for national development in the era of globalisation". This was followed by the introduction of nine-year Universal Basic Education (UBE) in 1994 and new initiatives to increase school enrolment and upgrade the teaching force. All teachers now had to have Diploma-II qualification as a state requirement. In practical terms this meant upgrading one million out of the 1.2 million primary school teachers.

Two particular challenges shape educational provision in Indonesia. First, the geographic and demographic conditions: Indonesia is a vast archipelago consisting of five main islands and thousands of smaller ones with the population dispersed throughout but concentrated on the two islands of Java and Bali. It has a high number of different regional, cultural and linguistic[1] groups often in disadvantageous economic circumstances. These conditions set up difficulties in distributing schools and teachers equitably and in providing formal education to children from linguistic and cultural minorities.

Secondly, Indonesia was one of the countries that suffered most in the recent Asian monetary crisis. The collapse of the rupiah in late 1997 and early 1998 caused the GNP to contract by an estimated 13.7 per cent. Up to that point, Indonesia had been increasing public expenditure on primary education. Between 1992-97 public expenditure on primary education as a percentage of GNP rose from 1.47 per cent to 2.61 per cent and as a percentage of total public expenditure on education from 26.9 per cent to 30.4 per cent. Inevitably the crisis will have impacted on public expenditure but recent figures are not currently available. However the severe adjustment policies brought in at the end of the decade have affected enrolment, transition and dropout rates in basic education and also the commitment of the community and families towards EFA goals.

As Indonesia approaches universal basic education, the government's main focus is on reaching those who have been left out of school in the past and on improving the quality of existing teaching resources.

Distance education projects

Indonesia's socio-economic, geographic and demographic challenges have made traditional educational solutions impractical and distance education a natural choice. Surveys in 1991 and 1993 revealed a wide range of distance education programmes initiated by non-governmental organisations, private institutions and 11 out of 20 ministries (Indonesia Distance Learning Network, 1999b, p. 5). Sixty-nine of these programmes catered for the pre-university level. In an effort to avoid duplication of effort and introduce a more co-ordinated cross-sectoral approach to the implementation of distance education programmes, the Indonesian Distance Learning Network (IDLN) was established. This was a joint initiative in 1993 between UNDP and the Ministry of Education and Culture (MoEC) and it operates as a central co-ordinating body for distance education, providing information services and promoting research and the pooling of resources.

[1] 300 ethnic groups, 583 languages and more than 200 dialects.

Within the MoEC, PUSTEKKOM (Centre for Communication Technology for Education and Culture) is responsible for developing, producing and evaluating distance education programmes.

There have been several distance education initiatives, old and new, for different basic education audiences and six will be discussed below, chosen because they cover the major themes discussed above. They are also summarised in Tables 7 and 8.

Both the *Instructional Programme for Primary School Students (SRPM-SD*) and *School-based instructional television Programme* bring extra multimedia resources into regular school classrooms. They are meant to supplement face-to-face teaching in general but also to help overcome disparities in teaching quality in remote places where low-qualified teachers are the only resource.

The Instructional Programme for Primary School Students (SRPM-SD) provides audiocassette resources in curriculum subjects for 4th, 5th and 6th grade students. Some 169 primary schools in 21 out of 27 provinces are currently participating in this programme which also contains a teacher-training element in the form of advice about lesson and activity planning. The total 1998-99 budget was US$ 25,511. This covers the planning, development and production of 70 master copies, the reproducing of 11,830 copies and their distribution to 169 schools in 21 provinces, monitoring and supervision. A 1996-97 survey among teacher and student users showed an overwhelmingly positive response to the materials.

School-based instructional television (STV) is a school broadcasting initiative started after the deregulation of the communications sector in 1988. PUSTEKKOM in the MoEC produces and provides ready-to-broadcast programmes and organises their use in schools through scheduling and the provision of television receiving hardware. The TPI national channel is responsible for broadcasting the programmes twice daily, first in the morning (7.30-8.30 a.m.) and then in the afternoon from 2 to 3 p.m. Seven subjects are covered at the junior-secondary level in nationally examined subjects (mathematics, biology, physics, Indonesian, English, geography economics). So far 583 STV programmes have been produced, 330 of which are for the junior-secondary level and 10 for the primary level. The MoEC has also distributed 6,613 television sets, 694 VCRs and other receiving equipment (including solar panels) to eligible schools in all 27 provinces. Problems identified so far include poor coverage in some areas due to poor receiving facilities, differences in time zones and bad reception. A survey revealed that students watch in variety of groupings – at school, in the community or family and individually. No cost analysis is available.

Universal Basic Education (UBE) has been implemented through formal and non-formal routes. The *Packet A and B programme* and the *Open Junior High School (SMP Terbuka)* are large-scale examples of the latter. They both provide alternative junior-secondary systems and educational opportunities to children who have either no access to primary and/or junior-secondary school or who have dropped out.

The *Packet A* programme aims to provide education services to out-of-school children between 6-12 and works on the principle of harnessing available educational resources in the community. It combines print-based, self-instructional materials with face-to-face teaching in learning groups of about 30 students who meet about three times a week for two hours in community buildings or local schools. The materials are based on the existing primary level curriculum and include vocational and community development subjects, such as income-generating skills. According to Visser (1994) 8 million students are reported to have been trained

nation-wide through Packet A since 1978, 60 per cent of whom are women. Between 1992 and 1995 circa 1.9 million learners participated in Packet A. Out of the 44,802 candidates (17,921 male and 26,881 female) in the 1997 final examination, 40,164 were successful. The yearly cost for one 30-student group (including materials, tutors and examination) is calculated at 563,000 rupiahs (US$ 1 = Rp 2,500) or Rp 18,800 per student. As a comparison, the cost per regular primary school student is Rp 229,770 per year (IDLN, 1999b, pp. 12-13).

Packet B is a similar set-up for the junior-secondary level or children of 12-15 years old without adequate school provision as well as for junior secondary drop-outs or adults who have not acquired junior-secondary level education. The print-centred modules are designed to be used independently, then discussed in learning groups of 30-40 people followed by tutorial groups. Tutors must be senior-secondary graduates. They mark assignments and administer centrally produced tests. The 1997 national exam results show that out of 104,826 candidates, 95 per cent graduated. Some 40 per cent of the candidates were women. Unit costs per student of Packet B students is Rp 111,570 compared to Rp 293,936 for a regular SLTP student. A recent evaluation recommended the free distribution of uniforms, reference material and stationery to motivate the students. This would produce a cost per student of 111,570 + 58,418 = Rp 169,988, still less than the regular student unit cost (ibid., pp. 27-29). Shortcomings identified in a 1998 evaluation include a low general perception of Packet B among parents, and the desire for more vocationally oriented areas.

The *Indonesian Open Junior Secondary School (SLTP Terbuka)* represents a different approach to out-of-school education. In response to unmet demand for places at secondary level, the Indonesian government has created an alternative system for young learners unable to get into mainstream school. This Asian model of open school, also apparent in India and South Korea, is distinctive because it retains close connections with the regular secondary-school system. Students learn from self-instructional materials used in conjunction with different combinations of low-tech cassettes and broadcasts and differing types of student support. Users are mainly from poor and rural families in which children have to work. They can continue to do so because they are not locked into a fixed timetable.

It was first developed in 1984 alongside the expansion of regular secondary school and is considered a part of it as the children follow the same curriculum and examinations. They attend open-school centres, often attached to regular schools, or based in a community building near their home. Centrally-produced self-instructional materials are designed to promote individual learning. These are also backed up by twice-daily radio and television broadcasting and local student and teacher support groups: the students meet for three hours daily, four to five time a week. Untrained local teachers' aides attend meetings and mark assignments and the students attend a weekly three-hour session with subject specialists at the base school. This provides about 15-18 contact hours of supervised study per week contrasted with the 27 hours contact in regular school.

Expansion of the project accelerated after the formal introduction of universal basic education decreed in 1994. In 1995 open schools were available in 59 provinces throughout the country with a total enrolment of about 50,000 students. By 1996-67 there were 172,000 in 956 locations with plans to expand to 410,000 in 3,270 locations by the end of the decade. However, the Asian financial crisis intervened in the meantime.

We have no information on dropout or graduation rates but a UNESCO report (Sadiman et al., 1995, pp. 77-79) states that between 1981 and 1993 5,450 students graduated from the system.

Recent figures show that in 1998-99 there were 3,773 open junior schools operating with a total number of 376,620 students. The aim for 2003-04 is 13,000 centres and 2.25 million students (UNESCO, 1999a). Examination results have been good for those who complete the course. Sadiman (ibid.) notes there was no significant difference between the academic achievement of open school and mainstream junior-school graduates and that pass rates of 92 per cent have been achieved in the national junior-secondary examination.

No detailed cost analyses are available and we do not know the cost per student. We do know that expenditure on junior schools has been limited to 60 per cent of the cost of mainstream schools (Perraton, 2000, p. 39). In the past, junior schools have been financed by local or central government (but not as part of the routine budget) and also by international funding from the UNDP and the Asian Development Bank. The latter has now ended and the IDLN are suggesting that further expansion to absorb new students would require the programme to be included in the annual educational budget and a full statement of costs and requirements.

The junior school cuts down on teaching costs associated with regular schools by making do with more modest buildings but by mobilising four different types of teachers already present within the community (1) a qualified subject specialist from the regular Junior Secondary School (JSS); (2) a primary school teacher or local person assigned to manage the learning centre and facilitate student learning; (3) a local person who has a specialised skill and can teach a practical subject; (4) a guidance and counselling teacher.

Diklat SRP and *D-II Ai* are distance teacher programmes. As previously stated, one million out of the 1.2 million teachers need upgrading from 1994. Since the absorption capacity of the Open Learning University is only about 50,000 per year, distance education initiatives became a natural alternative, particularly useful for working teachers in rural areas with no time or access to mainstream teacher-training colleges.

The *Diklat SRP – Primary school Teachers In-Service Training by Radio* is a three-year radio-led course, of 80 credits, to upgrade teachers to D-II standard. Programmes are broadcast through the State Radio Station twice a day, six days a week and are scheduled for school break time in the morning and repeated in the evening or night. Teachers divide themselves into listening groups and use the twenty-minute broadcast as a starting point for further discussion and activities found in accompanying print and audio-visual materials.

A team of curriculum experts and instructional developers assisted by a full radio production team develops the instructional package. The course is organised into six, six-month semesters with evaluations conducted after each one. The full course contains a total of nine hundred and sixty programmes. Each listening group is provided with a radio-cassette unit and is asked to make a monthly report back to PUSTEKKOM. The training is open to all primary schools but priority has been given to teachers in isolated regions (such as Aceh and East Timor), Islamic Primary schools and special schools.

Since 1992, 1,037,494 graduates have received the Certificate of Accomplishment. In the year 1999-2000 there were 396,333 teachers participating in the programme in different semester levels. No figures are available for dropout and failure rates. From 1992 to 1999 the entire programme cost Rp 6,823,021,800 (US$ 1 = Rp 2,500) for producing 1,037,494 teachers which works out at the unit cost of Rp 6,576 for each participating teacher. Evaluative results (UNESCO, 1999a, p. 57) show that urban

and rural teachers evaluate the programmes positively although the quality of the programmes – such as variation of presentation, appropriate activities and illustrations – needs improvement.

The *Diploma-II Air* has similar qualities to *Diklat* but uses a richer combination of multimedia learning resources – videos, radio broadcasts, and print materials, listening groups and tutorials. It is produced by a different team consisting of the Indonesian Open Learning University, the Directorate of Teacher Training and Technical Staff and PUSTEKKOM. The university develops the printed modules and natural science kits while PUSTEKKOM is responsible for producing the radio programmes, videos and supplementary guides. The Directorate and PUSTEKKOM distribute the supplementary materials directly to students and the radio programmes to national, regional, commercial and local government radio stations.

The materials are organised into five semesters with a range of teaching theory and practice themes. Students can study individually or in study groups and begin with the print materials in preparation for the 20-minute radio programmes broadcast twice daily from Monday to Saturday. Study groups (usually of five to ten students) then follow up the broadcast themes with discussion; video viewing, practice or fieldwork set in the practice guides. They also have four 25-minute tutorials in three months. To help students learn in a more organised way, the print materials use a wide range of abstracts, clarifying illustrations, graphics, drawings, and calculations. Assessment consists of objective tests, an examination, practice work (submitted worksheets) and field teaching. The Experience exam is given in the primary school where the examinee is teaching.

This programme has been affected by the financial crisis. Although in the period 1991-92 and 1997-98, 4,107 students were enrolled and 1,778 graduated, enrolment ceased during 1995-96 and 1996-97 and resumed for the following two years. However, the year 1999-2000 was also cancelled.

The unit cost per student per year is Rp 525,000 compared to the lower 460,000 for conventional programmes. However, the programme can accommodate more of the target group and train them faster than conventional college training, i.e. in thirty years as opposed to one hundred years.

Achievements

Indonesia has reported a significant growth in Early Childhood Development (ECD) from numbers of pre-school children. The gross enrolment in ECD expressed as a percentage of the official age group concerned rose from 36.7 per cent in 1990 to 42 per cent in 1999. Official figures suggest that the illiterate population (in the age group 15-24) decreased by 50.4 per cent in eight years, from 1.3 million (3.8 per cent) in 1990 to 662,551 people (1.7 per cent) in 1998. The adult literacy rates for 15 years and over increased from 79.8 per cent to 87.9 per cent during 1990-98.

Figures for school children are encouraging. The net enrolment ratio in primary education rose from 92 per cent to 94 per cent among the 6-11 age group during 1990-98. In the same period, the survival rate to grade 5 grew from 84 per cent to 90 per cent in 1990-97 while the repetition rates, particularly serious in Indonesia, have been reduced significantly from 9.7 per cent to 6.7 per cent. The percentage of primary school teachers who are certified to teach according to national standards rose from 91.5 per cent in 1990 and currently stands at 94.5 per cent. The percentage of unqualified teachers fell from 8.5 per cent to 5.5 per cent in the decade. Pupil-teacher ratio in primary education fell from 23 to 22 between 1990 and 1997.

Challenges

The financial crisis clearly had a negative impact on almost every core EFA indicator from 1997 onwards. Two areas are proving particularly challenging. First, very slow progress has been made in reducing the wide gap in education between male and female children and adults. This is mostly due to traditional practices. Experience seems to show that grassroots and community-based campaigns have been more successful in increasing female participation in education than programmes based in male-dominated schools.

Table 7. Major Distance Education Projects in Indonesia (1)

Audience/Purpose	Project/Institution	Date	Scale	Outcomes
Children and adolescents in school	*Instructional Programme for Primary School Students (SRPM-SD)*	1992-	1992-93: 12 provinces, 60 schools and 23 programmes. 1997-98: 21 provinces, 169 schools and 310 programmes (out of possible 27).	Audio-learning resources in range of curriculum subjects to support primary education[a]. 1998-99 total budget US$ 25,511 – 70 master programmes reproducing 11,830 copies, distributing to schools, monitoring and supervision. Unit cost of a programme per school is US$ 2,17. Unit cost of a programme per student about US$ 0,07 (7 cents).
	Instructional School TV Programme	1991-	National broadcasting coverage 2 hours daily (morning and afternoon). 6,613 TV sets and 694 VCRs distributed to schools.	583 STV programmes produced - 330 for junior-secondary level, 10 for primary levels and 243 for senior secondary. Yearly monitoring by provincial offices of MoEC[c].
Out-of-school and marginalised children and adolescents	*Packet A*	1978-	By 1994 8.5 million participants registered on Packet A. By 1994, more than 20,000 participants registered in Packet B. Between 1992 and 1995 11.9 million learners participated in Packet A[d].	Equivalency programme. At primary level, good participation of women (av. 60%)[d]. 40,164 success rate out of 44,802 candidates. Yearly cost of programme Rp 563,000* or 18,800 per student compared to 229,770 per student in regular schools.
	Packet B	1989-		Equivalency programme. At junior-secondary level. 1997: exam 95% pass rate among 104,826 candidates (40% women). Unit cost per Ss Rp 111,570 compared to Rp 293,936.
	Open junior-secondary school (OJSS/SLTP Terbuka)	1979-	1998-99: 3,773 OJSS operating with a total number of 376,620 students. 2003-04 aim is for 13,000 centres and 2.25 million students[a].	1981-93: 5,450 graduates. No significant difference in academic achievement between OJSS and regular students.

*Exchange rate US$ 1 = Rp 2,500,00

Sources: a IDLN, 1999b; b ICDL, 2000; c IDLN, 1999a; d Visser, 1994.

Second, although there has been a significant increase in qualified teachers, closer inspection of the figures reveals that most gains have been made with city-based teachers. Problems specific to the distance-education field include a limited pool of distance education writers and producers, difficulties in distributing ODL materials where geographical conditions limit postal services. Lack of awareness and the need to keep children at home for work still makes parents reluctant to send children to the open school. Solutions are thought to include promotional drives and improved student-support services.

Future plans for development in EFA areas

There is no available information on future plans at present but one growth area is likely to be the use of television for schools broadcasting and for the Open Junior School, with programmes transmitted directly to learners through a free dedicated education channel at DBS Cakrawarta. Educational radio programming also looks set for expansion. These would be broadcast by the World Space Company through the Asia Sat Satellite. ■

Table 8. Major Distance Education Projects in Indonesia (2)

Audience/Purpose	Project/Institution	Date	Scale	Outcomes
Teacher education	*Primary School Teachers In-Service Training by Radio Diklat SRP*	1992-	2 national radio broadcasts a day. 1999-2000: 396,333 teachers participating in 21 provinces.	3-year radio-led D-II equivalency course organised into 6 semesters. Basic components: radio, listening groups and print materials. 1,037,494 graduates since 1992 at a unit cost per teacher of Rp 6,576*. Participants pay for postage or assignments. 960 broadcast programmes.
	D-II Air	1992-	Two 20-minute radio broadcasts per day. 1992-97: 4,102 enrolled.	Radio-led D-II equivalency course in 5 semesters. Basic components: radio, video, listening groups and tutorials 4 times in 3 months. 1992-97: 1,778 graduates. Unit cost per Ss Rp 525,000 compared to 460,000 in regular schools.
Agricultural extension agents	*Distance education on data management for rural development*	1999	NA	Self-study print and video course to train extension officers to collect data, analyse, interpret and present data using computer software. 2-3 months' duration compared to regular 2-week course[a].
Distance education infrastructure	*Indonesian Distance Learning Network*	1993		Central body co-ordinating DE initiatives nation-wide and assuming production, management and distribution of DE projects[a].

*Exchange rate US$ 1 = Rp 2,500,00
Sources: a IDLN, 1999b; b ICDL, 2000; c IDLN, 1999a; d Visser, 1994.

Mexico

The Mexican Government has attached great importance to basic education and responded to the EFA initiative with a framework of national plans[1] and legal measures.[2] Basic education for children became the main focus in the 1990s, particularly in four fields: (1) a new commitment to improving pre-school education, (2) extending the length of compulsory education to nine years, (3) compensatory policies for poorer, bilingual and excluded communities, (4) improving the quality of existing schooling through teacher upgrading and new audio-visual resources, including computers. Improvement of quality, particularly in elementary and lower secondary levels, has included the reform of plans and educational programmes, which date from the 1970s. In 1998-99, the Ministry of Public Education produced 116,200,000 free textbooks and 3.5 million books for elementary teachers (*Work Report 1998-99*, Ministry of Public Education, 1999, p. 356). Moreover, since 1995 the Ministry has distributed new support books to lower-secondary teachers and since 1997 free textbooks to the students of general and technical lower-secondary schools in the most marginalised towns.

Distance education was assigned a supporting role in achieving basic education goals – in the 1995 Programme for Education at a Distance – and has contributed towards significant improvements in the target areas, particularly in reaching underserved rural communities at the pre-elementary, elementary and lower secondary levels. To underpin the national plans, there has also been strategic investment in the technological infrastructure, most notably in the establishment of the dedicated *Satellite Network for Educational Television* (*Red Edusat*) which will transmit educational programming through sixteen video channels and twenty four audio channels.

Achievements

A significant growth rate at lower secondary level is attributable to the *Telesecundaria* programme which has been providing direct television teaching to increasing numbers of rurally-based learners since the 1960s. Centrally-produced television programmes – covering the same secondary school curriculum offered in ordinary schools – are beamed via satellite throughout the country on a scheduled daily basis to *Telesecundaria* schools in two shifts (8 a.m. to 2 p.m. and 2 p.m. to 8 p.m.). Each hour focuses on a different subject area and typically follows the same routine – fifteen minutes of television, then book-led and teacher-led activities. Different levels in the same subject are staggered to begin at exactly the point at which the preceding level left off. The child is exposed to a variety of teachers on the television but has one home teacher at the school for all disciplines in each grade. Some 60 per cent of *Telesecundaria* teachers are fully qualified while 40 per cent are university graduates with no previous teacher training. They receive induction training followed by in-service training through televised programmes broadcast in the afternoons or on Saturdays. During its thirty-year existence, *Telesecundaria* has "become more pedagogically sophisticated, integrating the curriculum with community activism and constructivist pedagogy" (Calderoni, 1998, p. 10).

Telesecundaria is a rare example of an alternative secondary system that has survived various government changes and teacher union assaults and become institutionalised over thirty years.

[1] National Agreement for the Modernization of Basic Education, 1992.

[2] New Educational Law, 1993.

One reason is that it is widely perceived as equivalent, if not superior, in quality to its traditional-school counterpart. "It constitutes one of the very few programmes in which the poor receive a better-conceived and better-managed programme than urban middle and upper socio-economic classes" (Castro and al., 1999, p. 29).

In terms of effectiveness, results from *Telesecundaria* are mixed. Dropout rates are slightly lower than those of general secondary school and significantly better than technical schools. Interim achievement rates show that students "start significantly behind other students but catch up completely in math and cut the deficit in half in language" (ibid., p. 32). Official statistics for 1995-96 report that *Telesecundaria* students achieved a 93 per cent of exam pass rate compared to 75 per cent in traditional schools (they do not take the same exam but both are based on national standards). However, in 1998, in the annual secondary education entrance exam in greater Mexico City, students who completed *Telesecundaria* obtained the lowest percentage of right answers – 59 – which was 7 points less than the highest percentage obtained by students of general and technical schools (*Profile of Education in Mexico*, Ministry of Public Education, 1999, p. 74).

Following the introduction of satellite transmission, the numbers of learners grew from 512,700 in 1993 to 817,200 by the end of 1997-98, a figure which represents 15 per cent of all lower secondary students. During the same period there were 3,715 new *Telesecundaria* schools, 12,000 new teachers and 258,600 new students. This represented nearly half of all new recruits to the lower secondary ranks. By 1998 there were a total of 38,700 teachers (14 per cent of teaching force at this level) and over 13,000 schools (or 51 per cent of schools at this level).

Table 9. *Telesecundaria* – growth from 1988-89 to 1992-93 and 1993-94 to 1997-98

	1988-89	1992-93	Growth over 4 years (%)	1993-94	1997-98	Growth over 4 years (%)
Students*	448,4	512,5	14.3	558,6	817,2	46.3
Teachers	20,449	25,198	23.2	26,636	38,698	45.3
Schools	8,001	8,908	11.3	9,339	13,054	39.8

*Figures in thousands
Source: reproduced from Oviedo, 1999, p. 9.

Costs include teaching and administrative costs, physical facilities, televised programmes and books and while they are more expensive than urban secondary schools they are lower than what would be required to establish a general secondary school in a rural area. In 1997 the annual investment and recurrent costs were US$ 425,750,474 (Calderoni, 1998, p. 9). These costs are met internally without outside donor support. Perraton (2000, p. 35) found that, over a period of twenty years, the annual cost per student is consistently within the range of US$ 441 to 589 in constant 1998. Since 1998, some lower secondary schools, including *Telesecundaria* schools, have received support, in the form of external resources, from *the Programa para abatir el rezago en educación inicial y básica* (PAREIB)[1].

[1] Work Report 1998-99, Ministry of Public Education, 1999, p. 36 and pp. 61-62.

The success of *Telesecundaria* is widely recognised outside Mexico and its programmes are now used in other Central American countries such as Panama, Costa Rica, Guatemala, Honduras and El Salvador, as well as in Hispanic communities in the United States.

The *Video Libraries for Schools Project* provides additional audio-visual materials for teachers at the lower secondary level, whether in *Telesecundaria* or mainstream schools. These are geared to the National Curriculum and extend the range of resources in the classroom. The audio-visual materials of this project are addressed to students. Teachers have a support textbook about how to use the video-recorded materials in the classroom – *Acervo y usos de la videoteca escolar*. In 1996 *The School Network Programme* (*Red escolar*) began the slow task of integrating ICT hardware, software and Internet capability into schools and Teacher Centres. Unusually, there is also a well-planned framework for exploiting the resulting educational network: learning circles (class research and school linking projects), virtual cubicles (teacher linking) and discussion forums (for parents, teachers and topic specialists).

Distance education programmes have also appeared at lower levels. The new emphasis on pre-school education has led to a range of general *Telepreescolar* television programmes for children and also a text-supported, television series for parents of children under six (e.g. Let's Begin Together). *Teleprimaria,* a pilot project for televised elementary education, was trialled in the state of Oaxaca from 1991-92 until 1997 and focused mainly on teaching Spanish and Mathematics. We have little current data on the project but it appears not to have survived because of technological difficulties and an inadequately trained teaching force (rather than the pedagogical quality of the programmes).

In 1993 the Mexican government initiated a range of new teacher upgrading programmes to underpin the move towards nine-year compulsory education. All use some form of distance education. By 2000, 400 resource centres for teachers will have been established (*Centres for Teachers Project*), each carrying a stock of educational literature, audio-visual materials, access to the educational channel and self-study packages (*National Courses for Ongoing Training*). Presently, there are four new courses: (1) environmental education in secondary schools; (2) the acquisition of written language in elementary schools; (3) young people in secondary school; (4) head teachers in basic education (In Work Report 1998-99, Ministry of Education, 1999, p. 142). The latter are print-based courses for lower-secondary teachers in a range of subjects and levels and are supported by programmes on *Red edusat*. In-service training is also provided regularly during the school year and summer holidays through the *Workshops for Ongoing Training Programme*. Centrally-produced text guides and television programmes (*Summer Television Bar*) focused on specific educational themes support the workshop discussions.

In 1998 the government launched a new nine-month lower secondary distance-education programme for adults or *Secundaria a distancia para adultos*. This is available at *Telesecundaria* schools (outside school hours) and, following interest from larger companies, in the workplace. The programme consists of text-based, self-study guides at two levels and in five subject areas. Local advisors and television programmes provide support. Another more general television-led adult education course is *The SEPa English Programme*, a BBC/Mexican collaboration, which teaches English at four levels. The 1998 pilot was aired, via Edusat, in 22 states and attracted 9,000 learners in 358 groups. This course offers local level support in managed groups and has standardised examinations.

Radio for educational purposes has been used in Mexico since the 1950s. During the 1970s and 1980s it was widely used for adult education but in recent years there has been no national policy to foster its use which, unlike television, has been left up to local authorities. Although more wedded to television educational broadcasting, the Mexican government has nevertheless attempted to promote more interest and activity in educational radio recently at a local level and within ethnic groups via the *Bilingual Radio Units Programme* and the *Community Radio Programme.*

Challenges

Challenges remain in child education. Some 1995 figures (Oviedo, 1999, p. 8) show that 7.6 per cent of six-year old children are still not in school (compared to 3.3 per cent at seven and 2.8 at eight). Some 12 per cent of elementary graduates do not progress to lower secondary level) and of those who do, three-quarters drop out before the completion of the level (ibid., p. 10).

Of the 75 per cent of *Telesecundaria* students who successfully complete grade 9, only 21 per cent continue to high school, compared to 85 per cent of students in the mainstream schools (1994 figures quoted in Calderoni, 1998, p. 6). Other problems include shortages of print materials, absence of teachers, television breakdowns and loss of electrical supply.

The challenges in adult basic education are considerable. Some 1998 figures show the illiterate adult population as 6.1 million people, or 10 per cent of the entire population over age 15. The majority is in the older generation, lives in remote and scattered communities and is composed of more women than men. In addition, 12,618,000 adults (or 20 per cent of the population) have not completed elementary education and 18 million (28.7 per cent) have not concluded lower secondary.

Future plans for development in EFA areas

The predominant focus of the government has been on supporting the work of teachers and students in developing existing plans and programmes. Between 1999 and 2002 the Mexican government has planned to open 4,500 new *Telesecundaria* schools to address the needs of an additional 250,000 students. These should also be equipped with additional video resources supplied through the video-libraries project. To build on the successful completion rates of *Telesecundaria* and to address the dearth of secondary schools in rural areas, the government has initiated a new three-year television High School Programme for grades ten to twelve that is set for national distribution by 2002.

One future aim is to introduce an interactive element into *Telesecundaria* but rather than invest in high-cost video-conferencing, the government anticipates that ICT alternatives using low-level satellites and fibre optics will provide a less costly route, e.g. Internet-based communication used in conjunction with the television programmes. ■

Table 10. Major Distance Education Projects in Mexico

Audience/ Purpose	Project/ Institution	Date	Scale	Outcomes
Pre-school education	*Let's Begin Together*	Produced in 1997-98	All parents of children in or out of school.	40 national TV programmes for parents. 40 audio-visual reading guides.
	Telepreescolar	NA	NA	NA
Children and adolescents in school	*Teleprimaria*	1991-97		TV school-age programmes for remote primary children in Oaxaca region. Only a small percentage of rural schools in targeted area received TV signal, teachers and rural facilities inadequate to fully exploit programmes.
	The School Network (Red escolar)	1996-	1,424 schools in 1998, 32 centres for teachers.	Computer hardware, software and Internet to schools + learning circles (pupils + teacher) virtual cubicles (teachers only) discussion forums (parents + teachers).
	Video libraries	1996-	All lower secondary schools (including Telesecundaria).	Video libraries of programmes (80 videotapes, 100 hours) and support materials.
Out-of-school and marginalised children and adolescents	*Telesecundaria*	1968-	In 1997-98, 817,200 students, 38,698 teachers, 13,054 schools in 7,000 rural communities. US$ 424,750,474 investment and recurrent costs p.a.	Alternative TV-led secondary system. 15 TV programmes + printed material in all national curriculum subjects (+ rural context subjects) at levels 7-9. Accompanying teacher-education modules. 10% growth rate of programme in 1990s. Programmes also used in Panama, Costa Rica, El Salvador, Honduras, Guatemala (soon Belize, Nicaragua and Hispanic communities in America).
Adult basic education (equivalence lower secondary education)	*Secundaria a distancia para adultos*	1998-	NA	Self-study text materials + advisors and TV programmes. 2 levels (beginners and advanced) in five subjects.
	Education for Society	1999-	National (transmitted by commercial TV)	Citizenship TV programmes for general public.
	SEPa English Programme	1998	22 states, 183 advisors, 9,000 users in 358 groups.	61 English language learning TV programmes at 4 levels, 60 audiocassettes and 600,000 self-study packages.
Teacher education	*Teacher centres*	1996-	500 centres by 2000	Resource centres with library of books, multi-media, audio-visual material and satellite link.
	National courses for ongoing training	1995-	Elementary and lower secondary in-service teachers.	Print-based, self-study packages + support via satellite link at teachers centres.
	Workshops for ongoing training + Summer Television Bar	1996-	25 states participated in summer workshops with TV support.	In-service workshops in special education areas + TV support programmes and print resources on specific teaching themes and subject areas.
Distance education infrastructure	*The Satellite Network of Educational Television (Edusat)*	1995	8 channels, 20,000 hours (1998).	Dedicated educational TV network transmitting programmes of educational projects, e.g. Telesecundaria. 50% dedicated to initial and basic education (1997-98). Bi-monthly programming guide in print and web form for general public. Programmes also available in cassette form.
	Bilingual Radio Units	NA	47 bilingual radio programmes aired in 19 states.	
	Community radio	1987	NA	

Sources: Oviedo, 1999; a Calderoni, 1998, p. 10.

Nigeria

Nigeria's National Programme of Action (NPA, 1992) for basic education goals addresses issues of access and gender in pre-primary, primary and adult education. Its mid-decade goals included: (1) increasing primary school enrolment by 84 per cent; (2) increasing primary completion rates by 80 per cent; (3) reducing the gender gap by a third and adult female illiteracy rate by a third (i.e. from 60 per cent to 40.7 per cent); (4) expanding access to pre-primary education for 25 per cent of children under 6.

Distance education projects

Distance education in Nigeria has traditionally taken the form of correspondence courses, whether home-grown or external. The earliest recorded Nigerian distance student sat for a University of London Matriculation examination by correspondence in 1887. In post-independent Nigeria, new home-grown correspondence courses were produced as a stop-gap measure when the formal system could not meet the demand to increase access to education at all levels and to expand and upgrade the teaching force.

Teacher education demands were extreme. Between 65,000 and 76,000 of the 330,000 primary school teachers lacked even the minimum recognised teaching qualification in 1976 (Wali, 1976). From 1976 on the new dedicated distance teachers' college, the National Teachers' Institute, and other external-study university departments (Ahmadu Bello, Benin) have produced correspondence courses in teacher education.

A small range of correspondence courses in other skills and academic areas were also produced through higher education institutions – the Centre for External Studies (University of Ibadan), the Institute for Distance Education (Abia State University), the University of the Air (Federal Polytechnic Oko), Centre for Distance Learning (University of Abuja), Correspondence Open Studies Institute[1] (University of Lagos).

Distance education in Nigeria has mostly been used at the higher education and secondary level. There is a strong tradition of studying ordinary (O) and advanced (A) levels through commercial correspondence institutions, such as Rapid Results and Exam Success.

Achievements

The Nigerian EFA assessment revealed that few of the EFA goals had been reached and that there was an overall decline in almost all indicators of quality and effectiveness. But some small pickings emerge: (1) the gender gap dropped nationally from 18 per cent to 10 per cent between 1993-96; (2) greater emphasis was placed on quality in education; (3) there was more involvement of the community and non-governmental agencies in non-formal education; (4) the average national teacher/pupil ratio was down from 36 to 34 between 1988 and 1998. Perhaps the most valuable outcome of the EFA assessment has been the process itself. It provided comprehensive and unequivocal evidence about the urgent needs and poor state of education in Nigeria.

[1] Now Distance Learning Institute.

Clear-cut details of basic education projects are difficult to find but two Nigerian distance education projects emerge as significant to basic education goals. The first tackled the needs of nomadic pastoralists, one of the most isolated minority groups in Nigeria. The other addressed the urgent need to expand and develop the primary-level teaching force.

The National Commission for Nomadic Education (NCNE) was responsible for implementing *the Nomadic Education Programme* in the 1990s. In the early 1990s this involved increasing the number of nomadic primary schools. Following the success of a radio magazine for nomadic pastoralists in the northern states, the NCNE has taken a new direction recently and begun piloting a radio-based distance education scheme in Kaduna as a prelude to wider implementation.

This new departure is also a response to the inadequacy of current provision, which consists of 1,321 nomadic schools, 1,022 for nomadic pastoralists and 299 for migrant fishing communities. Although there has been an impressive increase in enrolment in nomadic schools – from 17,578 to 84,581 – during the 1990-95 period, the numbers still reflect a small proportion of the potential population. The 1998 total enrolment stands at 157,837 – 92,290 boys and 65,547 girls – but this is still low out of 3 million children (Irele, 1999). Similarly, although 35 states are participating, there are only 4,208 teachers, or 3 teachers per school. Some 53 per cent of these teachers are unqualified, have a shortage of instructional materials, poor school facilities and little or no supervision or inspection.

The low participation of nomadic pastoralists in education is due to a range of factors: their constant migration in search of water and pasture; the importance of child labour in their production system; the irrelevance of the curriculum to their everyday needs; sheer geographical isolation.

Radio has been a natural choice in such circumstances. There is 86 per cent of radio ownership among nomadic communities and an adequate broadcasting infrastructure in Nigeria. In addition to the five national radio stations, most of the 36 states have at least one station. Radio is attractive because of the relatively low capital costs and the potential for economies of scale. Centrally planned educational broadcasts and other instructional material were seen as a means of introducing a new standardised quality to the materials and providing nomadic learners with new access to qualified subject specialists.

There are two separate courses in the pilot programme, one for primary and junior level children and the other for adults and older adolescents. Each provides radio-centred programmes as part of a wider package which includes other print and audio-visual materials – see Table 11 below. The programme is promising because it has adapted itself to the conditions of the nomadic community and, through consultation with them, has developed course content which reflects everyday needs and lifestyle. Teachers, for example, follow the nomads and provide tuition at homesteads or pre-arranged meeting points.

The *National Teachers Institute* (NTI) in Kaduna is a dedicated distance teacher education institution that has been providing print-centred courses to in-service primary teachers since 1984. The NTI has the responsibility of expanding the number of primary teachers and upgrading all unqualified teachers. It also runs a distance course which trains adult literacy instructors (Aderinoye, 2000, p. 8) but we have no present information on this. By 1992, it had trained 300,000 Grade II teachers, "a significant number in relation to the Nigerian teaching force which rose from

177,221 in 1975 to 331,915 in 1990" (Perraton, 2000, p. 68). Aderinoye (2000, p. 7) suggests that to date the NTI has been responsible for upgrading 1.3 million unqualified teachers to Grade II and 36,000 Grade II teachers to the level of the Nigerian Certificate of Education (NCE).

In 1990, 39,214 were enrolled in the first year of NCE, 78 per cent of which were women and had an average age of 30-plus years (Bunza, 1999). Bunza, the Director of NTI, gives this as evidence of NTI's success in recruiting two interrelated disadvantaged groups – women and adult learners in the age range of 30 plus. Socio-cultural barriers, such as lack of mobility due to family and work commitments, restrict the participation of women in mainstream educational activities. Fagbamiye (1999) records that 24,000 successfully completed the 4-year NCE course in 1994, a slightly higher number than the total annual graduates from all 59 conventional Colleges of Education. Very little data is available about examination results and dropout numbers for NTI but these figures suggest a 61.3 per cent of pass rate in 1994.

The dedicated nature of NTI can be said to provide advantages over dual-mode universities: it can provide conditions for the development of a skilled team of distance instructional writers rather than rely on the goodwill of university lecturers with commitments elsewhere. A dedicated and well-oiled production system may also have a greater potential for the revising and updating of materials. NTI materials have gained wider recognition in other West African countries and are now used in Sierra Leone, Gambia and Ghana.

Difficulties include late delivery of materials due to a poor postal service, the long distances students have to travel to study centres and the inherently problematic organisation and supervision of study and microteaching at the local level.

Challenges

One key challenge facing the Nigerian educational sector is the need to improve its capacity for research and evaluation. There is inadequate and inaccurate data for educational planning and the capacity for data collection and analysis remains problematic.

At a recent UNESCO EFA seminar (1999d, p. 15) it was noted about Nigeria "that the (EFA) targets set were not met, in fact achievements were far below the set-targets". One figure is clear: from 1995-99, "US$ 8 million has been spent and only 3.7 million persons have been made literate" (ibid.).

The EFA assessment for Nigeria leaves us in no doubt that considerable challenges remain in basic education. There was a national decline in gross primary intake (98.5 - 80.2 per cent between 1991-96) with very low gross intakes and severe gender disparities in certain Northern states, including Sokoto, Kebbi, and Bauchi. A high drop-out rate from schools is a long-term problem. Between 1984-90 there was a total 41.2 per cent drop-out rate from primary schools. In 1994 the national attrition rate in year 1 was 18 per cent for boys and 17.6 per cent for girls, 7.6 and 6.2 per cent for years two to three and 12.3 per cent and 11.2 per cent for years 5 to 6. Schoolchildren's literacy and numeracy skills remain low nationally in both urban and rural areas, particularly in the English language. Poor teaching, inadequate facilities and a lack of schoolbooks are all factors. Over 10 per cent of schools lack a chalkboard and 54.2 per cent of all schools need chalk.

Despite a steady increase in the primary school teacher population between 1988-98, there remains an enormous dearth of primary school teachers, qualitatively and quantitatively, in Nigeria, particularly the northern states. In five northern states the percentage of unqualified teachers (even at TC level II) was in the range of 59-76 per cent while pupil-teacher ratio ranged between 60.1 and 111.1 in 1995 (NPEC 1998). The national percentage of totally unqualified teachers in 1996 was 19.7 per cent. The 16,190,947 primary school students are matched by 435,210 teachers (Europa Statistical Yearbook, 1998). There is thus an enormous need to train and retrain teachers in formal schools as well as literacy instructors. Fagbamiye (1999, p. 5) also points to the need for a rationalisation of teacher training and evaluation of quality. Currently there are 70 institutions producing NCE graduates via conventional college, distance education, part-time and summer sandwich programmes. They have widely different levels of efficiency and variable quality.

The case for the wider adoption of distance education in Nigeria has been discussed exhaustively (e.g. Tahir, 1999; Fagbamiye, 1999; Bunza, 1999; Irele, 1999) but its capacity to contribute significantly to EFA goals remains untested. Its potential has been recognised in primary teacher education and in giving marginalized groups and adults better access to non-formal provision. However, several factors have made the use of distance education difficult in Nigeria. The lack of government funding or a national policy on distance education has undoubtedly hindered the quality and effective co-ordination of distance education initiatives.[1] Severe infrastructural fragility hampers contact between different distance education initiatives, undermines efficient course delivery and limits the range of media used. Print courses are the norm with radio and television as rare components of a course and even then treated as optional extras.

There has always been a strong bias towards conventional education in Nigeria, perhaps because of negative attitudes to distance education. In the past, the lack of adequate government funding led to a mushrooming of privately-owned satellite distance learning centres. These tended to be run solely as a commercial venture. There appeared to have been "very little interest to provide qualitative education" and they were characterised by "large-scale examination malpractices" (Federal Ministry of Education, 2000, p. 8). As a result, a "haphazard .. uncoordinated and unhealthy spread of sub-standard education (had been) offered .. in the name of distance education" (ibid.).

The lack of a culture of research, of access to ODL documentation and of regular staff development severely impacts on quality, an area not well covered by government policy (Aderinoye, 2000, p. 6). Management issues are also central:

> wasteful and unnecessary spending, lack of prioritisation, distortion of values as well as wastage and extravagant spending on gargantuan projects that mostly do not serve the cause of education. On the contrary they are merely embellishments associated with the bureaucratic culture. There is therefore the need for accountability and transparency in conducting and managing the business of mass literacy delivery in Nigeria
>
> (UNESCO, 1999d, p. 15)

Radio remains a much under-exploited medium in distance education in Nigeria considering ownership figures. 80 per cent of potential beneficiaries of non-formal and adult education have radios. In 1995 there were 197 radio receivers per 1,000 inhabitants compared to 55 television receivers and 4 telephone lines (UNESCO, 1998). Major constraints include the problem of airtime

[1] There is only a skeletal provision for distance education in the National Policy of Education.

funding and government monopoly of broadcasting. This stands in contrast to neighbouring Francophone countries (Benin, Burkina Faso, Guinea, Mali and Senegal), where new opportunities for small radio stations have resulted in a wave of community radio programmes for non-formal and adult education, targeted at particular communities and often in a range of African languages. To achieve similar results Nigeria would need greater deregulation and privatisation of the communication sector. Another solution would be dedicated educational channels or dedicated time on the Government network (UNESCO, 2000 b and c).

Future plans for development in EFA areas

Two recent educational initiatives in Nigeria give grounds for cautious optimism: the relaunching of the Basic Education Scheme in 1999 and the Abuja Declaration of the 2001-10 Decade of Distance Education in Nigeria.

According to the "Vision 2010" for the country, EFA is to be achieved by 2010. Education is to be free and compulsory for all children between the ages of 6-18 by the years 2003 and 2009 respectively. Another goal is a 100 per cent adult literacy rate. New provision for teacher training, out-of-school children and adolescents will be central to the achievement of these reforms.

In contrast to the earlier EFA programme, distance education has been assigned a key role. This basic education scheme identifies target groups that would particularly benefit from distance education programmes: out-of-school children and adolescents, adult illiterates particularly women, semi-illiterates, fitters, mechanics, machine operators, artisans, traders, farmers and migrant fishermen.

To prepare for this new role, national and international educational policy-makers and distance education experts met to work on the Abuja Declaration on Distance Education in September 2000. This laid the foundations for a national policy and a strategy for establishing a solid institutional framework for distance education in Nigeria. Its recommendations to the government directly address some of the problems of the past. They include: (1) the re-establishment of the National Open University; (2) the establishment of a national open school (providing secondary education to 5 million out-of-school youth and adults); (3) a dedicated media channel for education, to include new developments in ICT; (4) the re-establishment of the Nigerian Distance Education Network at national level (to act as a professional association for the area and to lobby the government and provide informed policy guidance); (5) establishing a Distance Education Commission; (6) increasing information and library resources available to distance education; (7) pursuing funding support from a range of internal and external development partners; (8) training 20,000 distance education operators including course writers, support service providers, producers, managers, broadcasters, instructional designers and technicians; (9) the development of ICT- driven distance education delivery system.

All of these recommendations have been made on the basis of assumptions about certain enabling factors between 2001-10. Namely, improvements to the infrastructural framework (electricity and telecommunications), the commitment of government to EFA, consistent funding and democratic governance. These are large assumptions in the volatile Nigeria context.

The idea of a National Open School in Nigeria is modelled on the National Open School in India (e.g. UNESCO, 1999b and 1999d, p. 19) and, if implemented, could involve a jointly designed

programme between the five English-speaking countries in West Africa: Ghana, Nigeria, Sierra Leone, Gambia and Liberia (UNESCO, 1999d, p. 11). This could build on the existing coaching school system and adult evening schools held in school premises of public secondary schools. Centralised design and production of educational materials would inject a degree of standardised quality into current haphazard coverage of unreliable quality. ■

Table 11. Major Distance Education Projects in Nigeria

Audience/ Purpose	Project/ Institution	Date	Scale	Outcomes
Marginalised community (nomadic pastoralists)	*Nomadic Education Programme*	1996	Nation-wide on Federal Radio Corporation of Nigeria, Kaduna. Thursdays (9.30 a.m.) and Saturdays (8.30 p.m.).	30-minute radio magazine, broadcast 2x weekly disseminating general info on education to nomadic pastoralists. Independent evaluation in 1997 indicated high popularity among target group. Led to development of larger-scale (DE programme for target group). Interactive radio-based DE system for nomadic pastoralists reflecting everyday needs. Participatory approach – regular consultation with nomads re content. Programmes for two groups:
Out-of-school nomadic children (age 6-13)		1999	1-year pilot in Kaduna to precede larger-scale implementation.	1. **Primary and junior level** instructional materials in core subjects: English, Maths, Science, Social Studies and Health. Workshops for 4,208 teachers. Teachers provide tuition at homesteads or pre-arranged meeting point. Radio + print and audio-visual materials (flipcharts, audiocassettes).
Nomadic adults and youth		1999	1-year pilot in Kaduna to precede larger-scale implementation.	2. **Adult and youth non-formal education provided in radio-listening groups**. Functional literacy and numeracy, income-generating activities, agricultural extension, citizenship, functional literacy, vocational skills. Radio, mobile cinema, flipcharts, print, audiocassettes. Regular monitoring. Outreach/support centres for contact and distribution of materials[a].
Teacher education	*National Teachers Institute, Kaduna*	1976 Started teaching in 1984	31,000 students in 1996[d]	Two print-based 4-year DE programmes at TC II (primary) and NCE (lower secondary) levels. 1,890 hours of teaching per course. Trained 300,000 Grade II teachers by 1992[e] (Total teaching force 331,915 in 1990). 140 study centres in different state capitals and cities. 39,214 enrolled in 1st year of NCE (1990), 78% of women, average age 30+[c] and 24,000 successful NCE level teachers in 1994 (i.e. 61.3% pass rate) and more than the average. Yearly total from all 59 conventional Colleges of Education[b]. Courses written by dedicated NTI team and subject specialists from tertiary institutions. Students have to cover long distances to get to study centres. Frequent late delivery of materials due to poor post services. Shares materials with Sierra Leone, Gambia and Ghana.

Sources: a Tahir, 1999, p. 5; b Fagbamiye, 1999, p. 1 ; c Bunza, 1999, p. 3; d Irele, 1999, p. 35; e Perraton, 2000, p. 68.

Pakistan

The Global EFA assessment in 1999 prompted the Government of Pakistan to identify priority areas and revise previous basic education targets. The initial policy and action plan documents were the National Education Policy (NEP) 1992-2000, the Social Action Programme (SAP) and the eighth five year plan 1992-93 – 1997-98. These were succeeded by the National Education Policy (1998-2010), Social Action Programme phase-II (1998-2002) and ninth five-year plan 1998-2003 which are currently being implemented.

The goals in the decade included: (1) universal access to primary EFA boys and girls of 5-9 years of age; (2) increasing the literacy rate to 70 per cent by the year 2002 (50 per cent by 1995); (3) removing gender and rural-urban imbalances, including establishing 55,000 primary schools mainly for females (at a cost of Rs. 46,64 billion over a period of five years); (4) raising the participation rate of girls from 53 per cent to 82 per cent by 1998 and allocating 70 per cent of primary-school teaching posts to females; raising the quality of physical infrastructures, curricula (by making the courses demand-oriented), textbooks, teacher-training programmes, and the examination system at all levels of education; (5) broadening of the resource base for financing and for responsibility of basic education (more public-private partnership and involvement of non-governmental organisations).

These were ambitious goals considering Pakistan's daunting problems: constrained resources; a very low literacy rate at 35 per cent (70 per cent of which are rural and 75 per cent female) coupled with a galloping population growth of 3 per cent; a predominantly agrarian economy and a diverse and scattered population characterised by different geographic, demographic, ethnic and social patterns; low school participation and high dropout rates.

Distance education projects

Distance education in Pakistan is dominated by the Allama Iqbal Open University, which was established in 1974 and modelled on the Open University in the United Kingdom. It runs print-centred courses and makes use of radio and television broadcasts. It also has a countrywide network of regional centres (currently 32 regional centres and 22 regional co-ordinating offices) and students are provided with tutorial support at study centres using classrooms in schools the formal system.

Since 1975, the Institute of Mass Education at Allama Iqbal Open University (AIOU) has run a variety of community-based literacy programmes, based on extensive field research, which have aimed to address the learning and skills education of rural communities. Examples include *Integrated Functional Education* (IFE), *The Functional Education Project for Rural Areas* (FEPRA), and the *Integrated Functional Literacy Project* (IFLP). These were largely based around a methodology of group-study based in community premises with materials developed by the university and taking the form of cassettes, flipcharts, handouts and models for demonstration. The content included everyday literacy skills, health advocacy, skills training in childcare, poultry keeping, livestock management, sewing and knitting or subjects proposed by the local population. Field workers recruited and trained local group leaders and then supervised and monitored them.

FEPRA ran as an experimental project from 1982 to 1985, reaching about 1,500 learners. Estimates suggest that it could have reached 5,000 a year if expanded. It succeeded in reaching

people with little or no education – 55 per cent were illiterate and 66 per cent had not gone to school at all or only had lower primary education. Only 37 of the 126 groups were for women, as the livestock management course proved popular among men. Evidence suggests that it was successful in changing some local practices such as more frequent monitoring of women in pregnancy, improved livestock breeding techniques and higher vaccination rates for children (Perraton, 2000, p. 28). Dodds and Mayo (1996, p. 137) concluded that the experiment had demonstrated that the university "is best suited as a resource development centre, as a catalyst and a testing ground for functional education and communication strategies for rural areas".

We lack detailed information about current distance education initiatives and can only present a sketchy and impressionistic account of some projects. The *PTV-2 Literacy Programme,* a 39-programme television series, was broadcast throughout the nation by Pakistan Television in 1992-93. The 30-minute programmes are accompanied by a book and aim to enhance literacy rates among adults age 15 plus by teaching Urdu literacy and arithmetic for illiterate viewers. The series generated a favourable response but there was an absence of planning in three areas: (1) the content was not objective-based; (2) there was no pre-determined system of monitoring and evaluation; (3) there was no follow-up in terms of formally arranged viewing centres and face-to-face teaching. We have no available data on the numbers reached.

The *Integrated Functional Literacy Project* (IFLP), another AIOU initiative, targets illiterate female learners and aims to teach them to the point where they can join mainstream formal or non-formal education or study independently if they wish. Content is geared to ensure rapid progress in the basic skills of reading, writing and counting and includes training in income-generating skills such as knitting, sewing and cutting. The project uses the same group-study methodology outlined above and provides sewing and knitting machines. Evaluations showed that radio and television had been very successful in popularising the project and that it had showed some success in reaching its goals. 53 per cent of the learners stated that they were able to help families member in reading and writing while 77 per cent regarded themselves capable of tailoring clothes for family members; 70 per cent affirmed they could now read a newspaper or write simple letters. 57 per cent agreed the course helped them keep count of their money.

Student and tutor suggestions for improvement included more income-generating schemes, more equipment for skills development, transport facilities for participants, video programmes on functional literacy and television sets for the study centre. Tutors suggested more monitoring, additional materials in the centre, more emphasis on local dialect-based material and the provision of additional aids for learning such as flash cards, charts and videocassettes.

We do not currently have participant or centre numbers but a recent evaluation (Rashid, 1998) suggests that factors such as strong political support at the local level and the quality and location of the centre are critical external factors in success. Rashid recommends an expansion of the project but suggests the need for greater involvement of non-governmental organisations to help overcome financial and administrative constraints, the upgrading of centres by providing more resources (including television sets, videos), new income-generating materials and the integration of other modes of distance education, such as audio-visual aids and radio and television broadcasts, into the programme.

Allama Iqbal Open University also provides a variety of teacher training programmes. *The Primary Teachers Orientation Course* (PTOC), designed to attract new candidates to primary

teaching, recruited some 83,650 teachers between 1976 and 1986 (Perraton, 2000, p. 72). The full-credit course includes 18 correspondence packages, 18 radio programmes and 2 television programmes. The *New Primary Teachers' Orientation Course* continued its work but expanded the range of radio, television and video support, added further re-training courses for in-service teachers and also included new courses for the part-time tutors working on the project. The programme was launched in 1992 and until now 51,161 primary teachers, 250 senior tutors and 2,500 tutors have been trained. The Netherlands Government funded the project at a cost of Rs.97. 346 million (AIOU, 1999d, p. 38). *The Primary Teacher Certificate* (PTC), first presented in 1979, is aimed at untrained teachers with a minimum of one years' experience in addition to the PTOC. It is a full credit course comprising 18 correspondence packages, 18 radio programmes, a one-week workshop and a three-week teaching practice in the first semester. By the end of 1997, 22,653 teachers had completed the course (AIOU, 1999e, p. 38).

All the training courses above provide stepping stones into higher level AIOU courses such as the *Certificate of Teaching* (CT) and the *Bachelor of Education* (B.Ed.). 97,065 teachers completed the Certificate during the period 1981-98, 74,667 on the B.Ed. Courses between 1985-98 (AIOU, 1999e, p. 34).

We have information on only two projects for out-of-school youth and adults requiring equivalency education. One, the *Training of Educated Unemployed Youth* project began in 1997 with the aim of giving 5,000 young people work skills. By 1999 it had trained 2000 (AIOU, 1999c, p. 40). The estimated cost of the project is Rs 9 million.

The new *Women's Secondary Education Project* is an innovative programme aimed at girls and women from the age 14 upwards living in remote areas and, for a range of socio-cultural reasons, whose education stopped at grade 8. The programme helps them maintain their education and obtain the Secondary School Certificate. This is the qualification for entry into primary teaching, one of the few respected professions for women and one in which there is an acute shortage. The course provides "an alternative curriculum which is needs-based, skills-orientated and relevant to the lives of rural Pakistani women" (Haque, 1999, p. 7). The women study at home but once a week attend a nearby study centre for 2 to 3 hours. To complete the programme, the women must take 6 full-credit compulsory courses and 2 credits' worth of elective courses that are half to one credit each. 22 courses have been developed of which seven are compulsory, e.g. Islamic studies, Urdu, English, Arithmetic. The rest are elective and offered in five areas – Home Economics, Agricultural Education, Health Education, Vocational Technical and Commerce, Teaching. Agricultural Education, for example, includes poultry farming and the selling of homemade products. Local female tutors are appointed by AIOU for groups of 10 students. Students study 2 to 4 courses per semester with entry twice a year, in the autumn and spring semesters. They are assessed through written assignments and a 3-hour written examination at the end of the course. Presentation for an exam is based on successful completion of a course. This rose from 55 per cent to 86 per cent during the four semesters between 1993 and 1994. The pass rate in the same period fluctuated between 65 per cent and 76 per cent.

The programme has been the subject of various external and internal evaluations. Areas identified as problematic include fees, heavy workload, the problems of balancing work and domestic duties, long distances between students' homes and the study and exam centres, the lack of equipment to make full use of the audio-visual components of the course. Satisfactory identification and training of female tutors was also identified as a critical factor in effectiveness.

The programme, which AIOU ran in two pilot phases (1986-89, 1993 and 1995), ended in 1996 and has now been institutionalised as a regular programme called the *Secondary School Certificate (SSC) Programme*. The AIOU has now opened the programme to male learners by adding new courses and "removing gender bias from previous course contents" (Haque, 1999, p. 4). It has also added technical and science courses. AIOU designed the course so that it would also provide an entry point into other AIOU distance courses.

Achievements

Even when it was not possible to provide more resources to education, Pakistan made room for changing priorities within the education budget. It increased the allocation for basic education by 14 per cent (from 43 per cent to 57 per cent) over the period of 1990-99. Investment in primary education (both development and recurring) increased from Rs 9.563 million in 1990-91 to Rs 38.674 million in 1998-99. This is a record increase of 304 per cent in a short period of nine years. The increase in development budget is 231 per cent (Rs 1.179 million to 3.904 million) and the recurring budget 315 per cent (Rs 8.384 million to 34.770 million). Nevertheless, these improvements need to be seen in a wider setting. Education still accounts for only 7.8 per cent of the national budget and under one per cent of GDP, with little change in the last ten years.

The gross intake rate in grade I has been an encouraging 99.8 per cent (total) and 83.3 per cent (female). The Islamabad Capital Territory achieved the Universal Primary Education target with a 97 per cent net enrolment ratio. There was also a record 21 per cent increase in the overall gross participation rate at primary (I-V) levels from 60 per cent in 1990 to 81 per cent in 1998. A 100 per cent increase in primary schools from 81,393 in 1990 to 163,746 in 1998 indicate that educational facilities and services for primary education have expanded considerably. Mosque buildings owned by the community are also used for primary schooling. The government contributes to the salary of a trained teacher and pays an honorarium to the Imam of the Mosque. Currently there are 27,000 mosque schools in rural areas providing basic education up to grade 3 to around one million children.

The figures also suggest that there is no shortage of qualified and trained teachers at primary level for the current numbers in school. Almost 100 per cent of teachers are deemed to be academically qualified to satisfactory levels and 87 per cent are certified to teach according to national standards. However, these figures need to be seen in context. Teacher training in Pakistan for this level is usually for one year only and is taken by trainees after ten years of regular schooling.

Challenges

In spite of the achievements, the net enrolment/participation rate did not exceed 60 per cent, set against the Jomtien target of 100 per cent net enrolment by the year 2000. Put another way, 8 million children of 5-9 age group are never enrolled in school and half of the 12 million that are enrolled may drop out before completing primary education. Of all the E-9 countries, Pakistan has the lowest survival rates at the fifth grade. At that rate, the total number of out-of-school children may reach 14 million by the year 2002-03. Pupil-teacher ratio was not improved. In fact it rose from 37 to 48.4 during 1990-98. Early childhood care and development continues to be a neglected area.

Two areas in particular are disappointing – gender parity and adult literacy. "Despite assigning priorities and giving focus to female and rural education in EFA programmes and projects, gender and regional disparities could not be eliminated. The overall gross female enrolment/participation rate is only 68.8 per cent against 98 per cent male" (Pakistan EFA country report). Different levels of education show 93 per cent participation rates for male and 61 per cent for females in first five years and then in junior secondary 42 per cent male and 36 per cent female. Figures in rural areas are stark: "in the rural areas of interior Sind, NWFP and Baluchistan less than one per cent and in the Punjab 3 per cent of the girls of the relevant age group are enrolled in secondary schools" (Haque and Hellman, 1992). The proportion of girls' high schools in rural areas is very low compared to that of boys' and is restricted because of a lack of female teachers and a lack of suitable facilities for women in current schools. Only 35 per cent of primary school teachers are female and only 33 per cent of primary schools are exclusively female. This lack of progress is reflected in the gender parity index in Pakistan which deteriorated from 54 per cent to 48 per cent between 1990 and 1998.

Although 42 million adults are illiterate, only a few projects targeted this group. In 1998, the adult literacy rate of Pakistan was 45 per cent (male 56.5 per cent, female 32.6 per cent) against the National Education Policy target of 70 per cent. The literacy gender parity index stands at 0.48 against 0.54 in 1990 and demonstrates that high gender disparity in adult literacy could not be eliminated. According to Haque (1999, p. 5) only about 32 per cent of women in Pakistan can read and write. This is even lower among rural women – 20.08 per cent.

Bringing basic education to underserved areas has proved challenging because of financial constraints, socio-cultural barriers at the local community level and lack of institutional co-operation. Public participation in literacy programmes requires a strong level of collaboration between the local community, non-governmental organisations, provincial and federal government as well as broadcasting stations. This has proved extremely difficult.

Future plans for development in EFA areas

Efforts are being made to increase the present budget allocation to education from 2.25 per cent to 4 per cent of GNP (Siddiqui, 1999, p. 1). Future policies for the improvement of basic education are expected to give high priority to out-of-school children, illiterate adults (particularly females), programmes aimed at special children and the indigenous sectors in rural areas (settlement inhabitants, tribesmen, nomads).

There is a planned effort to increase the literacy rate to 70 per cent by the year 2002. This is a major effort since the rate was at 45 per cent in 1998, against about 35 per cent in 1999. Provincial governments, non-governmental organisations and local institutions are all to be actively involved. Another target is to achieve a 90 per cent minimum level of learning by primary school pupils by the year 2010. New measures to improve drop-out rates include an adjustment in school schedules and vacation periods and new ways of reconciling study and work for poor families in rural areas.

Another target is to strengthen the participatory dimension in the provision of basic education and to maximise the roles of the family, schools, community, non-governmental organisations and the media in the provision of basic education. ■

Table 12. Major Distance Education Projects in Pakistan

Audience/ Purpose	Project/ Institution	Date	Scale	Outcomes
Out-of-school and marginalised children and adolescents	*Women's secondary education project*	Phase II 1993-95	3,000 rural women completed (not clear whether Phase I or II), 2,000 due and 6,000 anticipated enrolment. 100 p/t tutors, 500 study centres.	22 courses (7 compulsory, the rest elective) in range of subject areas. Multimedia materials (print, audio and video). 100 local level female tutors trained. Equivalency curriculum with clear progression into other distance higher education and vocational courses. Now institutionalised and accepting males.
	Training of educated unemployed youth (skill development)		5,000 trained	2,000 passed in skill-related courses.
Adult basic education *(equivalence programmes and non-formal education)*	*FEPRA*	1974	1,500 learners, 126 study centres.	Functional courses in agriculture, livestock management, childcare, rural credit, electricity in the village, primary, middle and secondary school equivalency for adult and young adult women. Only 37 of the 126 courses were for women.
	PTV-2 Literacy Programme	1992	Nation-wide broadcasting by Pakistan Television. 39-programme series.	Adult literacy TV series teaching Urdu literacy and arithmetic. Accompanying print materials.
	Integrated Functional Literacy Project	1982	2,024 learners, 50 study centres.	Group study with audio-visual materials supplied by AIOU in content areas determined by learners. Includes literacy, income generation schemes, health advocacy, livestock management, and sewing.
Teacher education	*Elementary teacher education*	1997-98	268,884 trained teachers	Study material with non-broadcast media material supplied by AIOU according to national curricula. Study materials with TV/radio support and workshops.
	Teacher Training Network	1997-98	114,461 trained teachers in 32 FT and 22 part-time regional offices.	Student materials, study skills materials, tutors and senior tutor training materials.
	New Primary Teachers' Orientation course	1992	51,161 primary teachers 2,500 tutors 250 senior tutors 104 evaluators/ testers, 14 regional technical.	

Sources: AIOU, 1998, p. 2; AIOU, 1999a, pp. 72-73; AIOU, 1999b.

PART 3
GENERAL CONCLUSIONS

How well is distance education working in the nine countries as they seek to extend and improve basic education? While we are handicapped in answering the question by the scarcity of good evaluations, the national reports make it possible to reach some tentative conclusions.

Commonalities within E-9 Countries

The E-9 countries have things in common over and above their scale. This is itself significant for distance education whose economics demands large audiences. It has meant that most of the nine have been able to develop large-scale institutions, operating at various levels of education. The Central Radio and Television University of China is perhaps the largest educational institution in the world. In Latin America scale has led to the creation of specialist institutions teaching at secondary level while in Nigeria it has made possible the development of the unique National Teachers' Institute. Just as importantly, all these institutions have become part of the regular education system and are accepted as such.

Economic opportunity, educational demand, and strong policy direction have led to the establishment of these large institutions. The counter-examples are almost as interesting. Only in Latin America and Indonesia have governments created non-conventional institutions at school level on a large scale. The Indonesian Packet A programme is particularly unusual as the only reported large-scale example reported of a distance education programme offering the equivalent of primary education. As yet, the open schools of India and Indonesia are attracting a much smaller proportion of the age group. The most important alternative system in Asia is probably the Bangladesh Rural Advancement Committee (BRAC), operating outside government, and not using distance education. And, while the large Asian countries all have national open universities with a variety of functions, Egypt, Nigeria, Brazil and Mexico have not chosen to establish them. Some of the structures adopted are set out in Table 13.

Some of these differences spring from different views about the role and functions of the state. Bangladesh, Brazil and India all have strong pluralist traditions which leaves space for non-governmental organisations and the private sector to play a significant role in education. Non-governmental organisations, with BRAC as only the largest example, are important in all three countries while *Telecurso* in Brazil represents a partnership between the public and private sector of a kind which does not appear in the African and Asian examples. Within Latin America, non-governmental organisations have been of particular importance in adult education with Roman Catholic Church agencies to the fore.

These differences in culture and in organisational structure have a bearing on the audiences reached through distance education. As suggested in Part 1, few examples of distance education programmes offering the equivalent of primary education are documented. Only in Indonesia has a programme of any scale been running on a sustained basis. At junior-secondary level, the

successful, long-standing programmes in Brazil and Mexico mean that large numbers of adolescents are receiving an education at a distance, while smaller numbers are doing so in South Asia. The reports suggest that, despite enrolment ratios that indicate a potential demand, China, Egypt and Nigeria have yet to be persuaded of the value or legitimacy of this approach. The figures also demonstrate that while large numbers of adults, in all nine countries, have completed only a primary education, few of them have been attracted to secondary equivalence programmes. These have generally recruited adolescents who cannot get into regular schools. There are examples of non-formal programmes for adults, some of them run by the Asian open universities with broad responsibilities written into their charters. In China some 150,000 rural dwellers have been trained in agriculture through distance education. There may well be more programmes for adults than the documentation suggests as non-formal education is a notoriously under-reported area and it is safe to assume that our accounts are understating activity of this kind. Reports probably also understate the use of distance education for teachers

Table 13. Some Structures for Distance Education

Countries	Multi-media junior secondary institutions	Open university with range of functions including e.g. teacher education and secondary equivalence	Specialist teacher education institution working through distance education	NGO and private-sector activity
Bangladesh	No examples reported	Bangladesh Open University (including teacher education, non-formal and secondary).	No examples reported	BRAC major player but not using distance education.
Brazil	Telecurso	No examples reported	No examples reported	Telecurso
China	No examples reported	CRTVU and other open universities training teachers.	Major function of some open universities.	No examples reported
Egypt	No examples reported	No examples reported	No examples reported	No examples reported
India	National open school, state open schools	IGNOU and other open universities with major functions in teacher education and some non-formal education.	Some teachers colleges thought to be experimenting.	Significant activity under-reported.
Indonesia	Open School	Universitas Terbuka offering courses for teachers.	Several projects working with authority of Ministry of Education.	No examples reported
Mexico	Telesecundaria	No examples reported	Distance education, including teacher training, responsibility of various dual-mode universities.	No examples reported
Nigeria	No examples reported	No examples reported	National Teachers' Institute. Some activity at dual-mode universities.	No examples reported
Pakistan	No examples reported	Allama Iqbal Open University offering some teacher education and experimental non-formal courses.	No examples reported	No examples reported

where many agencies work in the E-9 and other countries. In India, for example, many of the open universities have programmes of distance education for teachers whose details are not recorded in the recent UNESCO survey. In terms of numbers, it seems likely that the largest audiences are those at junior-secondary level in Brazil and Mexico and in teacher education in all other countries.

Technology

The role of technology in education may be changing rapidly. Newspapers carry daily accounts of the transforming power of the new information technologies and there are some reports of the use of computers to support education in the E-9 countries. Two main features dominate accounts of technology. The first is that the simpler technologies, and especially print and radio, dominate the story. They can reach remote parts of large countries at modest cost. The second concerns broadcasting. The scale of the nine countries mean that they can afford to use direct satellite broadcasting or indirect satellite distribution for the large audiences they are seeking to reach. National dedicated broadcasting channels and the use of television – despite its relatively high production costs – are a possibility for high-population countries that do not exist for small states.

Outcomes and Costs

We are short of data on outcomes. In many cases, it is possible to say something about the size of the audience reached by a particular programme or project. But in only a much smaller number of cases have we data on the effects that education has on the learner. For the junior-secondary programmes, we have some data on examination results that make it possible to be positive about the effectiveness of the model within its own environment. Similarly we have positive evidence on completion rates and examination pass rates for some teacher education programmes, both from the National Teachers' Institute and from the Asian open universities. But in many cases, outcome data are limited to statements about the numbers of students enrolled and tell us nothing about what they gained from the course.

The limited outcome data available are summarised in Table 14, together with information on costs. Here, the evidence is consistent that, given adequately large numbers, the costs of distance education are likely to compare favourably with those of conventional education provided the measure is cost per student. Large numbers bring down unit costs. As a result, it has been possible for Indonesia, for example, to set the costs of its open secondary school at 60 per cent of the costs of regular schooling. If we measure in terms of the cost per successful student, it is more difficult to establish the economic case for distance education. One simple conclusion is, however, possible. Given the numbers of students expected to be in mainstream educational programmes in these large countries, it is often possible to design distance-education alternatives that compare favourably with the conventional model in terms of cost per student.

Where completion rates are high, as in many teacher-education projects, favourable results are being achieved in terms of cost per successful student. The rather piecemeal evidence suggests two kinds of future agenda, in policy and in research.

Table 14. Comparative Data on Extent, Outcome and Costs of Some Distance Education Activity

	Project/Programme	Scale of activity	Outcome data	Cost data
Bangladesh	Bangladesh Open University, B.Ed. Programme	21,000 students (1995)	NA	NA
Brazil	*Telecurso*	200,000 students (1999)	Pass rate similar to conventional schools.	NA
	Programa TV Escola	900,000 teachers (1997)	NA	NA
China	Liaoyuan TV University	150,000 rural dwellers trained.	137,000 qualified with green certificate.	NA
	TV Teachers College	2 million new teachers trained, 4.82 million upgraded (1986-97).	NA	NA
Egypt	Distance-teaching upgrading course for teachers	100,000 by 1996	NA	NA
India	National Open School	130,000 (1998-99)	Completion rate about 25%.	NA
	IGNOU SOPP teacher upgrading by video-conference	3,000	NA	NA
Indonesia	Diklat SRP primary teacher upgrading	396,300 teachers (1999-2000)	NA	
	Universitas Terbuka - upgrading for lower secondary teachers	5,000 students	Positive evidence on some teaching skills.	Cost about 60% of equivalent.
	Packet A (primary equivalence)	8.5 million students	90% examination pass rate.	Significant cost economies.
	Open School	376,000 students	Comparable to conventional schools.	Lower than conventional schools.
Mexico	*Telesecundaria*	817,000 students	93% pass rate.	Costs higher than conventional because class sizes necessarily small.
Nigeria	Nomadic Education Programme	31,000 (1996)		
	National Teachers Institute	157,000 (1998)	Success rate 61%	Cost probably lower than conventional college.
Pakistan	AIOU-Primary Teachers Orientation Course	83,650 students over 10 years	56% completion, 38% examination pass rate.	NA

Agenda for Future Action in the E-9 Countries

The *policy implications* follow from the evidence that, while distance education can produce positive educational outcomes, the way it does so is conditioned by geography and by political expectation as much as by any other factor.

Thus, of the nine countries, Egypt and Nigeria would seem to provide opportunities to use distance education at *junior-secondary level* to meet the demands to expand this sector. Although China is on the way to achieving nine years of EFA, there may be scope for secondary-level initiatives beyond the nine years.

Teacher education at a distance seems to have been successful where it has been tried. With the probable exception of China, and the partial exception of Nigeria, teacher education seems to have been on a relatively modest scale in relation to the potential need.

For the E-9 countries, there may be benefits in looking not only at experience of other countries within their regions, but also to continue to explore the commonalities and differences among the nine. In particular, there may be opportunities for bold transplanting (and drastic modification where necessary) of models from one region of the world to another. The scale of the Asian open universities, and their acceptance within the education system, may offer an important demonstration to Egypt and Nigeria. The Latin American models of junior-secondary education appear to be more well-established, and probably more sophisticated in their approach and technology, than those in other parts of the world. Indonesia's large programmes for primary-level out-of-school education are unmatched elsewhere.

The biggest gap, however, at least in the reporting, is in the use of distance education for *adult and non-formal education*. While the needs of adults gained a new prominence at Dakar, little work is reported either of education directly targeting an *adult audience* or the *extension agents* and *health workers* who work with large rural publics.[1] Remarkably, there are no reports on programmes to provide education in relation to HIV/AIDS.

The evidence would therefore suggest the possibility of expanding work for *school equivalence*, for *teacher education*, and for *non-formal education,* especially in relation to *health*. Within all three areas special attention is required to increase the participation of girls and women in educational activities. Strategies for all these areas have been developed that could usefully be applied in most, if not all, of the E-9 countries. Low-tech and broadcasting strategies figure strongly but there are also a growing range of projects which make innovative use of the new information technologies.

However, even with identified needs in these three areas, educational policy-makers in the E-9 countries are unlikely to commit themselves to any initiative, large – or small-scale, on the basis of inadequate or incomplete information. There is therefore a pressing need to compile existing literature in the three fields and make a critically selected range available to decision-makers in the nine countries. This could be achieved by various means: printed reports, field-specific conferences, dedicated websites or CD-ROMs with user-friendly databases. In view of the

[1] Although work by non-governmental organisations and by Ministries other than the Ministry of Education may be under-reported.

scattered sources for this report, we suggest that any database – online or otherwise – be easy to access. Valuable literature exists but is often buried deep in rabbit-warren generalist websites. What is required is some form of dedicated E-9 or subject-specific site. The literature should be critically reviewed with a view to drafting a guide to good practice in each of the areas and should be based on E-9 and, where appropriate, other international experience.

In some areas, however, literature needs to be generated. As we have seen, information about costs and outcomes is thin on the ground. Part of the problem is that educational institutions, though often willing, have lacked the resources for research. In some of these E-9 cases, it is clear there is very little tradition of research at all. Generally, the stretched resources and geographical expanse of the E-9 countries make information systems, data collection and analysis a logistically difficult area. There is an area ripe for development in all E-9 countries.

At the core of a *research agenda*, then, is the need to map the various uses of distance education and, by examining their methodology and outcomes, to develop well-established guidelines for planners. We know something of what works in the three different fields but not enough about a range of critical variables in the use of distance education: costs; the costs of individual elements within a distance-education programme; the choice of methodology in relation to differing national infrastructures; the most appropriate organisational ways of integrating distance education into the regular education service.

The most promising model for this research is (1) to build on the methodology and results of this survey and improve the collection and reporting of data on current activity and (2) to develop collaborative action-research in which researchers in E-9 distance-teaching institutions explore ways of strengthening their practice. International groups can learn from each other and pool experience. One recommendation would be the setting up of a series of case studies on distance education in each of the three fields – school equivalence, teacher education and non-formal education – with a view to establishing guidelines for good practice. In-country researchers could be identified and contracted to conduct the research and, together with a co-ordinating organisation, form an action-research network that brings together distance-education practitioners with experience or interest in each field.

In each field, it would be necessary to look in some detail at a range of areas, including the organisational model, technologies, costs and outcomes of distance education programmes. In order to make comparisons between projects, it is important to achieve a degree of consistency among the research teams. Detailed guidelines could be developed in consultation with researchers and provided by the co-ordinating body. There may be difficulties in getting full information on costs, sometimes a sensitive area, either on distance education or conventional approaches. Assessment of outcomes is also difficult and a process for this would be developed as a result of consultation among the researchers and with research methodology experts. At the very least, however, this agenda is likely to include sources of data on outcomes such as measures of successful completion rates, examination results, measures of learning gain, assessment of competencies and classroom observation. The results of the action-research studies would be made widely available in electronic and print form, possibly on dedicated websites or in report form to E-9 educational policy-makers. ■

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Brazil

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The past ten years have seen important progress towards Education for All in almost all of the nine high-population countries (E-9) – Bangladesh, Brazil, China, Egypt, India, Indonesia, Mexico, Nigeria and Pakistan – along with an intense development of distance education experiences. They also gave birth to a surprising change of vision and rhetoric expressing hopes and promises attached to modern technologies.

This publication presents the development and future of distance education programmes in the E-9 countries and also provides concrete elements to better understand the possible role and impact of distance education and new technologies in basic education.