

**2005 Education for All Global Monitoring Report**

**Improving the quality of primary school  
through distance education**

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**Distance Learning  
and  
Improving the Quality of Education**

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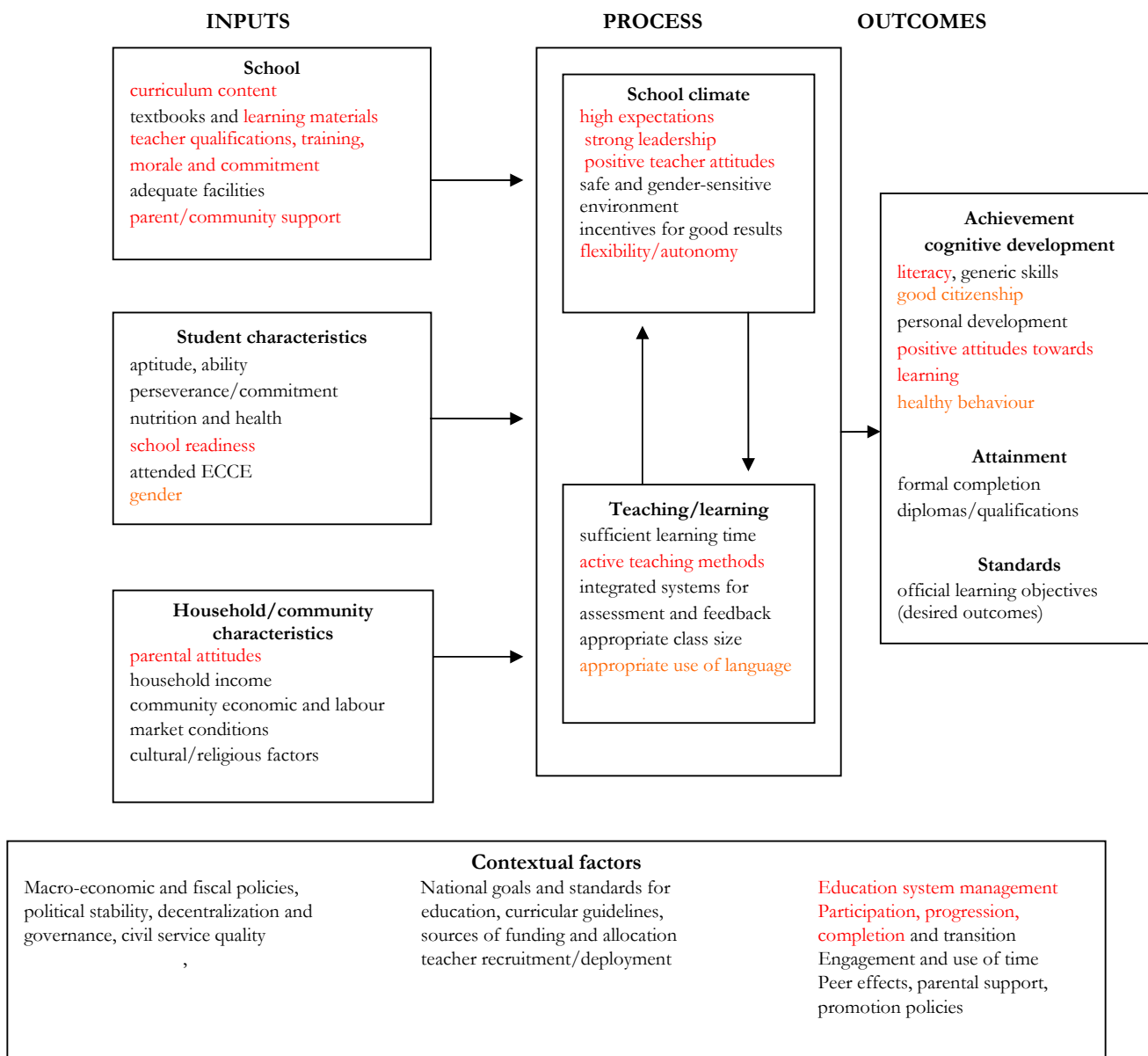
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## PART 1

Conceptualise a framework which shows the ways and means by which distance education (DE), including the use of information communication technologies (ICTs), has the potential to improve the quality of teaching and learning in primary schools in financially constrained education systems, especially in developing countries.

The input-process-outcome framework used in the previous EFA Global Monitoring Report (UNESCO 2002) is reproduced below, with those areas highlighted where we have identified from the literature quality dimensions where there is evidence of activity in distance education.

**Table 1: An input-process-outcome framework for assessing education quality**



*Source:* derived from Heneveld and Graig [1995], OECD/INES [2001], Scheerens [2002].

Most of the highlighted areas are at a high level of generalisation, and perhaps do not emphasise the particular strengths which distance education brings to the table, albeit in the context of recognising that the integrity of the primary classroom is central to the search for quality, and that distance education will only be able to offer

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particular contributions to enhancing that environment. We offer a more restricted model below, based on those elements where distance education offers a particular perspective.

**Table 2: Framework showing role of distance education in improving the quality of teaching and learning in primary schools**

Potential of distance education	Existing areas of activity	Outcomes for children
<p><b>Flexible delivery</b></p> <p>Reaching the hard to reach children (e.g. remote rural areas)</p> <p>Flexible, adaptable for special contexts (e.g. orphans and other vulnerable children)</p> <p><b>High quality materials</b></p> <p>Can generate high quality teaching and learning materials for core primary curriculum</p> <p><b>Range of media</b></p> <p>Offers range of media, from print through radio to computers</p>	<p>Key areas followed up in this paper are:</p> <ol style="list-style-type: none"> <li><b>1. Community mobilisation</b></li> <li><b>2. School leadership and management</b></li> <li><b>3. Raising the quality of teachers</b></li> <li><b>4. Curriculum and new teaching and learning resources</b></li> </ol>	<p>We shall be trying to identify:</p> <ol style="list-style-type: none"> <li><b>1. Positive attitudes to learning leading to reduced drop-out and increase in staying-on rates.</b></li> <li><b>2. Gains in basic skills in literacy and numeracy.</b></li> <li><b>3. Knowledge about key life skills issues.</b></li> </ol>

## PART 2

**Drawing on available literature, cite evidence of where distance education has a proven record of improving the quality of primary education. While this assessment should focus wherever possible on the quality of student and school performance and achievement, impact on the quality of the inputs and investments into primary education should be considered as well.**

### 2.1 Characteristics of research in distance education

In trying to assess the contribution of distance education to the quality of in-school primary learning we are limited by a shortage of good evaluation. Given the international expansion in the use of distance education and the great expectations that often accompany it, this is serious omission which would need addressing if the situation is to change.

Politicians, businesspeople and increasingly the general public, have the idea that distance learning can change radically the face of education.. We have a duty to let them know whether or not these expectations are grounded in reality.

Daniel 2002:2

In general distance education is an under-researched area and the need for improvement in the quality and quantity of research and evaluation is widely acknowledged (Naidu *forthcoming*; Anderson 2004; Cookson 2002; Daniel 2002; Berge & Mrzowski 2001; Perraton 2000; Panda 2000; Jegede 2000, 1999; Ramanujam 2000; Phipps & Meriosotis 1999). What research exists tends to be strong on description but weak on evaluative data, both quantitative and qualitative, on which to make judgements about effectiveness and this is particularly so in developing countries. What are the reasons behind this? The usual suspects, common to research in any area, are there: poor dissemination, limited research skills and constrained resources which often push research and evaluation to the bottom of the agenda. But there are also other reasons specific to distance education itself.

First, distance education programmes present substantial logistical and methodological challenges for researchers because of the way they characteristically disperse responsibility – for student support, administration, tutoring, course production, delivery and assessment – among a range of partners operating at different central, regional, state and local levels. Programmes also tend to operate on a large scale over wide distances, as in the case of highly-populated E-9 countries such as China and Nigeria, or in geographically challenging terrain, such as the dispersed communities of the Indonesian archipelago and the mountainous areas of Nepal. In these circumstances, collecting data – even just numbers – can become logistically problematic and requires more sophisticated information management systems and research skills than are often evident.

Second, distance education has played a crucial role in the national development of third world countries in addressing issues of quantity, access and cost. Historically, quantity far more than quality has been the governing concern and this is reflected in a research tradition dominated by description and a focus on numbers and costs. Highly centralised correspondence DE models held out the compelling quick-fix promise to ambitious governments (and their donors) that numerical gaps in the mainstream educational system could be overcome at the same time as achieving economies of scale. Within this industrialised model of education, quality is often seen to reside, ready-made, in the standardised package of self-study print materials rather than in their local-level mediation; the materials are often regarded as self-standing, teacher-proof and have the potential for a long shelf-life. Another problem is that since DE has often been regarded as either a stop-gap measure or a specialised educational approach, it has tended to operate as a parallel system to the mainstream educational structures. As a result, rather than using existing pools of mainstream expertise and infrastructure, many programmes are instead preoccupied with setting up their own structures in curriculum development, materials production and outreach infrastructures and it is easy to see how quality issues can get overshadowed. There is also another less generous interpretation that may explain the lack of focus on quality:

Open and distance learning is regarded by students and ministries of education as a second-rate system used to offer a shadow of education while withholding its substance. It is an inefficient but cheap way of containing educational demand without meeting it. Through its existence it

helps insulate the elite system from pressures that might otherwise threaten its status or ways of working.

Perraton 2000:199

It is a sobering counterargument to enthusiastic advocates of distance education and rhetoric about its role in opening up access to educational opportunity. Before moving on to examine the evidence, it remains to say two points: that the quality and quantity of research and evaluation in distance will only improve through pressure, planning and investment; that in judging the effectiveness of distance education, frameworks need to include quality criteria specific to distance education (e.g. equivalency with mainstream provision, acceptability of qualifications gained through distance education, balance between central and local level learner support). The following tables suggests criteria for evaluating the quality of distance education programmes.

**Table 3: Criteria and indicators for assessing quality in distance education programmes**

Quality criterion	Indicators
Coherence	To what degree is distance education integrated into mainstream educational policy, structures and expertise? What distinctive role is ODL playing? (extending access to disadvantaged groups, facilitating in-service training, etc)
Cohesion	To what degree is there a balance between central and local elements of the programme? How efficient are the lines of communication between the different implementing partners at different levels and different geographical sites?
Quality management	Is there a policy, plan and framework for ensuring quality? Does this include a statement on personnel, and expected areas/levels of expertise? Is monitoring and evaluation information used for managing quality?
Accessibility	Have stated goals been achieved in terms of the composition of the learner pop, e.g. rural/urban, disadvantaged? How do the figures compare with equivalent programs in conventional education? What are the attendance figures at study centres? What are the distances learners have to travel to get to study centres?
Effectiveness	What are the enrolment, drop-out, completion, successful completion rates? How do they compare with equivalent programs in conventional education?
Impact	What changes have taken place as a result of the program? in teaching methods, skills, curriculum, confidence, improvements in quality of life, e.g. promotion, employability, mobility? Has the program resulted in particular local development, e.g. establishment of community study centres, new usage numbers?
Efficiency	How efficient is the delivery of materials to the learners? How efficient are the channels of communication between the different What is the turnaround of assignments?
Acceptability	How far is the program/learners/qualification accorded acceptance and status? by recognition of qualifications by employers, professional associations and other ed. institutions, s In salary award? To what degree does the program draw on/provide mainstream resources (inspectors, study centres, tutors) and a nationally recognised examination system
Relevance	To what extent are identified needs (curriculum, social, economic, linguistic) met?

## 2.2 Evidence of activity

Distance education (DE), including the use of information and communication technologies (ICTs), is being used in developing-country contexts in ways which have the potential to influence the quality of school-based primary education. For convenience, these disparate programmes can be grouped under **four** main headings.

First are **community mobilisation programmes** which promote civil society participation in primary school education through the training of informal or formal Parent Associations in internal governance, financial management, school health issues and HIV/AIDS, gender equity, and advocacy techniques. These work from the view that community stakeholders – parents, carers, leaders and organisations – can play a central role in supporting and strengthening primary school and help build continuity between a learner's upbringing in their family/communities and their experiences in the school. Their aim is to build an environment of mutual responsibility and help parent associations to leverage funding. Distance education examples include two USAID-funded radio initiatives, FEREMA in Honduras and PACEEQ in Guinea, both of which aim to enhance the school readiness of children and parents and thereby increase retention rates. The two programmes are strategically deployed in areas known for, respectively, high drop-out rates and a legacy of distrust and disinterest in public schools.

Second are programmes focused on **raising the quality of school leadership and management**. In the context of trends towards decentralised educational management headteachers are required to take on new roles as change agents and instructional leaders. DE and ICTs come into their own in situations which call for in-service training delivered to headteachers and their deputies in situ in rural, widely scattered schools. One popular model is self-study print modules used in combination with meetings (examples include materials produced for francophone West Africa by The African Network for Education at a Distance, known as RESAFAD, and those for anglophone Africa by the Commonwealth Secretariat). China, with its high population challenges, employs television (Central China Television) and ICT networks (School Governance Network For Educational Improvement, Gansu) to extend training on a national scale to primary headteachers.

Both the third and fourth type of programmes aims to strengthen the basic unit of a classroom teacher + curriculum and learning materials + a classroom of pupils. The third type centres on **raising the quality of teachers**. In developing countries many working teachers are untrained or underqualified or teaching subjects in which they are not qualified. The flexibility inherent in distance learning makes it particularly appropriate for a widely-distributed force of teachers and for demands for 'a continuum where training opportunities are spread more evenly over a career lifetime' (Lewin 2003: 351-352). It has also facilitated the delivery of aspects of school-based training, an emerging model for teacher education which focuses on the school as a site of teachers' learning.

Distance teacher education programmes of this type can be categorised in four ways. Some lead to *initial qualifications* such as the print-based, correspondence programme run by the National Teachers' Institute in Nigeria or television broadcasting from the China Television Teachers' College, whilst others focus on *continuing professional development* and include correspondence courses (e.g. the BPrimEd at UNISA), interactive TV for short course training (in Egypt, India, Morocco and Israel) and television broadcasting (e.g. APlus in Brazil). Others support teachers in *curriculum reform and change*. Examples include highly structured ready-made interactive radio lessons beamed directly into classrooms which act as a model for teachers (Open Learning Systems Educational Trust in South Africa), combinations of print and audio (UNICEF and the Ministry of Science, Education and Culture, Mongolia) and online programmes to teach teachers how to use ICT in their teaching (Universidad de la Frontera, Chile). Lastly, are *system-building* programmes, aimed at building capacity in the existing educational system. Examples here include a print-based distance course for teacher educators offered by the Open University of Sri Lanka, self-study print materials for new and working school inspectors (produced by the Commonwealth Secretariat) and interactive television for training resource centre coordinators (DEP-DPEP II programme, Indira Gandhi National Open University, India).

Fourth are DE and ICT-based programmes bringing aspects of the **curriculum and new learning resources** into the classroom. Introducing ready-made classroom resources, highly-structured or semi-structured, can expose both pupils and teachers to new methodologies. They can provide the means of introducing new

learning materials quickly and of diversifying the range of learning and teaching resources for the pupils and teacher. Examples include the use of highly-structured, self-learning materials accompanied by explicit teaching of new content (Escuela Nueva in Colombia and BRAC in Bangladesh), interactive radio instruction (OLSET's 'English in Action', South Africa and INRAP in Guinea), radio and TV schools broadcasting, (SRPM-SD and STV in Indonesia, SABC in South Africa) and ICTs (ICT 2000 project in Nepal, Headstart in Madhya Pradesh and Eskuela ng Bayan in the Philippines).

Inevitably, there are overlaps between the four categories. Some programmes are multidimensional and combine aspects of some or all four types. For example, all interactive radio instruction (IRI) programmes include teacher education and curriculum delivery. Escuela Nueva and BRAC address all four areas. APlus combines teacher education with an outreach community mobilisation network.

### 2.3 Evidence of evaluative data

In annex 1, we provide examples of developing-country programmes in these four categories and record available evaluative data. The shaded examples indicate a box with more details on outcomes in annex 2.

### 2.4 The roles of distance education: main battalion or division?

Before looking at the sum of evidence from this database, we first examine what particular function distance education is playing in these programmes (annex 3). This might help to evaluate whether there are, for example, particular areas of quality most susceptible to distance education. In theory, distance education can play a role in the delivery of aspects of any educational programme but literature shows that distance education has been most commonly used to achieve one or more of the following specific aims.

**Table 4: Roles of distance education**

<ol style="list-style-type: none"> <li>1. To provide access to quality provision on a national or regional scale, e.g. in high population countries</li> <li>2. To increase access to/quality of provision under particular geographical circumstances, e.g. sparsely populated rural areas, mountainous regions, a widely dispersed group of learners.</li> <li>3. To meet particular needs, e.g. disadvantaged/marginalised groups, itinerant learners, conflict situations.</li> <li>4. To facilitate in-service training.</li> <li>5. To usher in the potential for regular in-service training, i.e. lifelong learning</li> <li>6. To enrich classroom resources, e.g. multi-media learning, new methodologies,</li> <li>7. To by-pass the inertia of the mainstream educational system or the dilution/slowness factor of the cascade training model, e.g.             <ul style="list-style-type: none"> <li>- to bring new materials and practices directly to learners and teachers</li> <li>- to introduce curriculum reform quickly</li> </ul> </li> <li>8. To facilitate and democratise access to a shallow pool of experts.</li> <li>9. To achieve economies of scale.</li> <li>10. To avoid the cost of replacing a professional attending college.</li> <li>11. To expand the number of enrolments/cohorts per year, e.g. by blending face-to-face with distance elements</li> <li>12. To reach a large-scale numbers of learners.</li> <li>13. To capitalise on widespread ownership of radios/TV's.</li> <li>14. To develop local level infrastructure (educational, community and/or communications)</li> <li>15. To strengthen existing educational infrastructure and training</li> </ol>
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Of the programmes examined, a large percentage (83%) are using distance education, to use military terms, as part of the main battalion. Big population countries such as Nigeria, China, Indonesia, India, Brazil use distance education in the four types of teacher education, on a large national scale as a recognised and institutionalised part of the regular system. Other countries also employ it when unified training is required within the mainstream system on a national or regional scale to small (headteacher, teacher educators) or large target groups (CPD for teachers or reorientating teachers in times of reform or change). In some cases, though, distance education serves a more distinctive role, for a certain type of battle under particular

circumstances (bringing training opportunities to geographically challenging areas) or to meet particular needs (to support severely under-resourced rural schools and/or inexperienced teachers, for itinerant learners).

Most of the programmes are exploiting the potential of DE to provide the means for delivering regular in-service or in-situ training for a range of learners – teachers, parents and other community stakeholders, school managers, teacher educators, study centre supervisors, inspectors. A concomitant advantage of in-service training is the avoidance of the costs involved in replacing a professional attending residential college.

Other programmes, noticeably donor-led small projects run by NGOs and private sector set-ups, are operating outside the mainstream educational system and can act as a potential source of innovation. Their outsider status brings advantages and disadvantages. On the plus side, it has given them freedom to by-pass the inertia or constraints of some mainstream practices and delivery systems or the dilution/slowness factor of the cascade model of training. Their independence enables them to introduce innovative new practices, using the people's technology of radio or TV, far more quickly than the mainstream system and establish proactive small-scale interventions which may then become adopted within the mainstream. For example, the outsider status of the APlus and OLSET teacher education programmes, has given them independence from some political and pedagogical constraints that often accompany formal programmes. It has allowed them to research teachers' expressed needs more closely than many programmes offered by state providers and to create support for teachers of a directly practical nature, the sort of provision that is often unavailable through state provision. Interactive radio instruction programmes provide a very direct way of bringing new materials and practices directly into the classrooms. On the negative side, the detached status of these many of these initiatives, has left them to financial uncertainties because they are dependent on external funding often on a project basis.

Technology-based distance education also appears to be used to facilitate and democratise access to a shallow pool of experts, particularly at a continuing professional education level in teacher education and in times of curriculum reform and change. A range of technologies are being used in the programmes although print remains the staple, providing a permanent document that is convenient to use. Distribution may be physical or electronic. Radio is also being widely used for formal teaching, helping to bring teaching alive, and overcoming the problems of physical distribution that may limit print.

In some cases distance education is acting as a friendly outsider, either as a parallel system within the mainstream (e.g. offering an equivalent alternative to residential teaching education colleges) or as an independent innovative intervention. One by-product of this is its contribution to the development of local level infrastructure. The SchoolNet programmes, for example, contribute to capacity building in terms of skills and the communication infrastructure. The community mobilisation programmes create parent associations. In other cases, distance education is fully integrated into the mainstream educational system and is being used to enrich and strengthen the existing resources and infrastructure. Schools broadcasting programmes and the whole-school approaches of Escuela Nueva and BRAC bring new materials and methodologies to enliven the classroom and support hard-pressed teachers.

## **2.5 Analysis of evidence**

What, then, is the sum of evidence from this data base? As anticipated, strong evaluation material is in short supply. It tells us virtually nothing about the quality of student and school performance and achievement and only a little about its impact on the quality of the inputs and investments into primary education. Also there is limited data about how programmes compare with any mainstream equivalents and the relative quality of teaching between the two streams. It follows, then, that while the available data advances our understanding, it can only be considered as partial. Nonetheless both the discussion and the examples point us towards those aspects where further research is needed, as well as highlighting the practices needed for better management of information and evaluation data.

The key findings from the eight boxed programmes are presented in tabulated form below. They represent a modest set of (known) evaluation outcomes from sometimes rather large investments.

**Table 5: Quality gains**

Country/Programme	Box	Quality Gains
<b>Leadership &amp; Management</b>		
B. Faso School Leadership	1	More effective school management Unified training on a national scale
<b>Teacher Education</b>		
Nigeria/NTI	2	Cost effective supply of primary teachers Significant numerical impact on teacher supply Unified training on a national scale – alternative but equivalent route to national qualifications
India/IGNOU	3	Teachers gained in subject competence Teachers motivation and interest increased Unified training on a national scale
Egypt/Distance Training Network	3	More confident teachers in one-classroom schools Unified training on a national scale
Brazil/Television-Plus	4	High level of voluntary participation of teachers Content based on identified practical needs of the teachers themselves Opportunity for reflection on presented and personal teaching practices
<b>Curriculum</b>		
South Africa/OLSET	5	Improved quality of teachers' own use of English language and their teaching of it
Colombia/Escuela Nueva	6	Increased participation rates in rural schools Reduced drop-out and repetition Achievement tests show EN students outperforming standard schools in most subjects in Grades 3 and 5 Heightened community involvement in wide range of activities compared with traditional schools
Guinea/IRI	7	Increased attendance Increased pupil enjoyment Improvement in teachers competence in three areas – linguistically, subject knowledge, methodology
Haiti/IRI	7	Gains in mathematics and reading over a control group Reduced absenteeism Teachers identify changed learning processes and better classroom management Use of local languages
Chile/Enlaces Network	8	Early qualitative evidence of: - Increased reading skills - Increased motivation - Greater focus on collaborative working and problem solving - Relations between teachers and students more collaborative

Although evidence is thin on the ground, there are certain lessons that emerge of significance. Experience has shown, and this current data seems to bear this out, that the centralising tendencies of much distance education needs to be balanced with far more local level support if it is to be effective, particularly regular two-way, field-based interaction between students and tutors. The importance of the local level has long been underestimated in distance education. It requires the sort of investment and planning that many traditional models of distance education seek to side-step. One persuasive rationale for distance education is to centralise and industrialise those parts of education for which it is appropriate and so devote more time and resources to creating more opportunities for interaction and reflection. This would suggest a move towards greater complementarity between distance and regular education, a far more judicious, rationalised used of distance education. This would depend on a greater integration of distance education approaches into the mainstream educational system, where once it was only an alternative or emergency system.

## PART 3

### Based on international experience so far, where does the greatest potential lie for exploiting distance education to improve the quality of primary schooling?

We begin by reiterating a conclusion supplied for the EFA 2000 Assessment: ‘There is no alternative to the primary school. Technology-based alternatives have not thrived.’ – UNESCO 2001:48. Given that key proposition, we need to identify ways in which DE can support the basic unit of the primary school, and within it, the teacher and students in the classroom. A number of the programmes that we have looked at in part 2 address ways in which formal classroom practice can be strengthened and modified in order to generate a more living classroom, with resulting diminution of absenteeism and drop-out, and cognitive and attitudinal gains by students.

The three broad areas we highlight are teacher education, the particular needs of under resourced rural primary schools, and the more general enrichment of all primary schools with new and innovative educational resources.

#### 3.1 Teacher education

The examples we have given show the actual outcomes of DE approaches to teacher education, across the full range of the professional life of a teacher, including the enhancement of the skills of headteachers in leadership and management. DE for teacher education is now an integral part of the responsibility of a teacher education directorate in many countries. Whilst DE is undoubtedly playing a major part in addressing the **supply** of primary teachers, the issue of **quality enhancement** remains problematic, particularly in respect of the key element of support for the student/teacher in the classroom during what is frequently now a lengthy practicum. Even within school-based or school-focused schemes of both initial teacher education and CPD, the weakest link is often in relation to the quality of support provided at or near the teacher-student interface.

In this section we also note the potential of organisations working outside the normal ministry frameworks to influence practice of teachers in schools, OLSET in South Africa and Television A-Plus in Brazil being important examples. They are, in carefully formulated programmes, able to bring innovative practices direct to the working teacher, and sometimes, in the case of IRI, right into their classroom, where they can have an immediate effect. The potential of IRI to provide immediate modelling experiences on which a teacher can build their classroom methodologies is very important. Too often, its potential has been stunted by project timelines which do not recognise the lengthy period of support needed for grounded change in teacher behaviour.

#### 3.2 The rural primary school

There is a particular need to address quality issues in under-resourced rural primary schools in the form of highly structured whole school approach. DE brings distinct advantages to this problem, the key generalised elements being:

- Provision of high quality, relevant self-study learner guides (as in Escuela Nueva) which expose both pupils and teachers to new educational resources and practices but also offer support, respite and training to hard-pressed in experienced teachers dealing with multigrade classrooms
- The use of interactive technologies, particularly radio in IRI (Haiti, Guinea, Zambia) but also occasionally computers (Chile)
- Good quality teacher training using DE approaches can create a cadre of teachers who have the skills and confidence to generate positive classroom environments and where appropriate deal with multigrade methodologies, whilst having a better grasp of subject content, particularly in respect of initial literacy and mathematics.

It appears highly likely that a multiplier effect will emerge from the harnessing of these three elements together, rather than treating them piecemeal. Escuela Nueva and BRAC offer the most well reported examples of structured approaches which address the needs of the whole school.

### **3.3 The general enrichment of school learning resources**

There is a more general need to enrich all primary schools with ready-made, semi-structured classroom resources to support and extend a teacher's repertoire. These can provide the means of introducing new engaging learning materials and methodologies quickly and can diversify the range of learning and teaching resources open to the pupils and teacher. Approaches include:

- a more multi-media approach using simple technology such as print materials (books, visual materials, ready-made self-study worksheets
- schools broadcasting – radio and/or TV – particularly in curriculum subject areas and health advocacy.
- interactive radio instruction

## Annex 1

The examples are given under the four main categories and are organised, in descending order, by broad technological model (print-based DE, radio broadcasting, TV broadcasting, ICTs).

**Table 6: Community mobilisation programmes**

<i>Case</i>	<i>Funding &amp; implementing partners</i>	<i>Aim</i>	<i>Technologies</i>	<i>Scale &amp; Outcomes</i>
Fundación Para La Educación Ricardo Ernesto Maduro Andreu (FEREMA), Honduras 2003-	Funding: USAID + MoE  Implementing partners: Educational Development Center (EDC), FEREMA & Ministry of Education	Increase involvement by community stakeholders in primary education.  School preparedness for pre-school children in areas with high primary school drop-out and failure rates.  Reduction of student repetition in 1st grade.	Interactive radio instruction (IRI) (Highly structured radio series + print materials + meetings + support/extension materials for teachers and parents)	Pilot stage -- too early to have evaluative evidence.  Intended outcomes: 100 3-min IRI lessons for pre-school children.
Community Participation for Equity and Quality in Guinean Basic Education (PACEEQ), Guinea 2001 – 2005	Funding: USAID + MoE  Implementing partners: Education Development Center (EDC) + MoE + World Education + Save the Children.	Promoting community participation in primary education in rural areas with a history of parental distrust and disinterest of state schools.  Assisting in establishing and certifying Parent-Teacher Associations as non-governmental organisations (NGOs) which can then leverage funding from their local governments and USAID.	Radio broadcasting in local languages via radio stations in two rural areas: Labe in north-central Guinea and Kankan in northeast Guinea.	Pilot stage: no data on no. of listeners or nos. of new PTAs but one evaluation in Labe suggests regular listening in extended family/community groups, greater participation in school associations and raising community funds for the schools, and increased girls' enrolment.  General outcomes include: Capacity building at local radio level – writing and producing local language soap opera series of 44 weekly programmes.  Move away from local radio being mouthpiece of central government to one that includes local programming and addresses local needs.

**Table 7: School leadership and management**

<i>Case</i>	<i>Funding &amp; implementing partners</i>	<i>Aim</i>	<i>Technologies</i>	<i>Scale &amp; outcomes</i>
African Network for Education at a Distance (RESAFAD), <i>Burkina Faso</i> 1997-2001	Funding: French Bilateral donor aid – FFr 650,000 + FFr 50,000 for Internet related charges (over 4-yr period) Partners: RESAFAD (incl consortium of French universities & local level resource centres) + Ministry of Basic Education + teaching institute & colleges.	Strengthen management capacity of primary headteachers in joint programme involving Burkina Faso, Guinea, Mali and Togo.	Print self-study modules + face-to-face meetings. ICTs used in course development and national and international communication between team members.	See box 1 for outcome details.  Burkina Faso programme: 1, 275 headteachers participated over 3 yrs. 98% of total enrolments in northern region, 72 % in the central region.
Commonwealth Secretariat, <i>several countries</i> 1993-	Funding: CommSec, UNESCO, SIDA, GTZ + MoE's  Ministry of Education in some African countries then financed their own versioning of the materials, e.g. Botswana  CfBT funding (£30k for translation into Portuguese for Mozambique) Materials development partner: LINS, Oslo	Strengthen management capacity of primary headteachers in developing country contexts	8 self-study print modules	No currently available systematic data on scale or impact.  No available evaluative data but the use of the materials in training programmes in Ghana, Namibia, Zambia and Uganda suggests they have proved useful.  Translated into Portuguese for use in Mozambique and Brazil.
School Management and Economics of Schools, <i>Czech Republic</i> 1997-	Funding for DE course: University funding Funding for e-course: MoE grant + EU programmes  Implementing partners: Centre of Lifelong Education and Department of innovation and projects in University of West Bohemia	Strengthen management capacity of primary headteachers in Czech Republic	Print-based distance education + web-based materials and support (moving towards online environment)	40 participants per year since 1997.  No available systematic data on impact. Problems: only 40% headteachers in primary schools have sufficient computer skills to undertake the programme. Some problems with reliable access to web.
Programme in educational management, <i>China</i> Central Radio and Television University <i>China</i>	Funding: MoE + student fees  Partners: China Television Teachers' College (CTVTC) and 44 Provincial Radio and Television Universities	Strengthen management capacity of primary headteachers and administrators in China	TV and radio broadcasting	By 2001, 29,000 (sic) registered participants.  No available systematic data on impact.

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1999-	(PRTVUs)			
School Governance Network for Educational Improvement in Gansu, <i>China</i> 2001-3	Funding: InfoDev Program , World Bank.	Strengthen school management and planning of headteachers in isolated rural schools in remote regions of Northwest China.	ICT-based learning network + print materials for headteachers in Gansu	No outcome data available.

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**Table 8: Teacher Education****8.1 Initial teacher education – programmes leading to qualified teacher status**

<i>Case</i>	<i>Funding &amp; implementing partners</i>	<i>Aim</i>	<i>Technologies</i>	<i>Scale &amp; outcomes</i>
National Certificate in Education Programme, National Teachers' Institute, <i>Nigeria</i> 1990-	Funding: MoE + student fees	Provide an alternative but equivalent route to primary teacher qualifications for unqualified new and working teachers.	Print-based distance education	See box 2 for outcome details.  90-94: 21,000 NEC graduates (no comparable with total admissions of 58 regular colleges of education).  90-99: 48,204 NEC graduates
Proformacao programme <i>Brazil</i>	Funding: MoE 36%, 64% shared by state and municipal governments  Implementing partners: 3 tiered implementation structure (federal, state, municipal)	Train 27,000 uncertified primary teachers to certification level in grades 1-4.	Self-study print materials + local bi-weekly group meetings, supervision of school practice and communications system between trainees and Training Agencies at 8 state levels (email, telephone, interactive TV, teleconferencing)	in 15 Brazilian states.
The China Television Teachers' College (CTVTC), <i>China</i> 1987-1999	Funding: partly government, partly student fees  Partners: China Television Teachers' College (CTVTC) and 44 Provincial Radio and Television Universities (PRTVUs)	Television (or video copies) + print + audiocassettes + meetings	Provide large-scale teacher education within a unified national system of teacher training.	87-99: 717,300 (sic) unqualified primary teachers gained basic qualification for primary teaching.  No available systematic data on impact on teaching methods or pupil learning gains. Quality tends to be judged on numbers of qualified teachers produced and the reputation of programme presenters.

## 8.2 Continuing professional development (CPD) – programmes and activities extending teachers' knowledge, skills and expertise throughout a teacher's working life

<i>Case</i>	<i>Funding &amp; implementing partners</i>	<i>Aim</i>	<i>Technologies</i>	<i>Scale &amp; outcomes</i>
BPrimEd programme, University of South Africa (UNISA), <i>South Africa</i> 1998-	Funding: MoE + student fees	In-service route to teacher education degree for working teachers wanting to upgrade.	Print-based distance education + meetings + audio and videocassettes	No available data on scale.  No available systematic data on impact on teaching methods or pupil learning gains.
The Distance Training Network, Technological Development Centre, Egyptian Ministry of Education. <i>Egypt</i> 1999-	Funding: MoE + USAID & World Bank  Implementing partners: MoE, range of international ed. partners (e.g. UNESCO, BBC, French & German cultural centres, UNICEF) + 3 national ed. research centres.	Provide short in-service courses for teachers on a national scale in particular subject areas, e.g. updating subject knowledge, multigrade teaching	Satellite-based interactive TV technology + meetings in various states	See box 3 for outcome details  39 Distance Training centres nationally distributed. Network can accommodate 5,000 trainees at one time. The working hours are nine hours daily, with a total average of 2,664 hours per year.
Gyan Darshan, Indira Gandhi National Open University, <i>India</i> 1996-	Funding: MoHRD + variety of multi- and bilateral donor agencies.  Implementing partners: National and State Councils of Educational Research and Training, Indian Institute of Technology (IIT) + Indian Space Research Organisation (ISRO) + infrastructure of Indira Gandhi National Open University			See box 3 for outcome details.  Study centres nationally distributed (mainly using IGNOU state infrastructure). Short 2-5 day workshops can accommodate between 500-1400 teachers in each state.
A-Plus Programme, TV FUTURA, <i>Brazil</i> 1997	Funding: Private consortium of 14 public and private institutions which sponsor TV-FUTURA, a non-profit ed. TV channel.  Implementing partners: TV FUTURA (broadcasts and Community Mobilisation Network) + 8,600 participating institutions (schools, hospitals, prisons)	To engage teachers' interest in educational debates and expose teachers to new practical teaching skills.	National ed. TV broadcasting (or video copies) + newsletters, telephone call-in centre + local meetings (organised by Community Mobilisation Network)	See box 4 for outcome details.  13 million regular viewers (60% teachers, others include parents, social workers and nurses). 8,600 participating institutions (in localised Community Mobilisation Network) which serve a potential 1, 200, 000 educators.

### 8.3 Reorientation of teachers for curriculum reform and change – programmes supporting teachers in changing what they teach and how they teach it.

<i>Case</i>	<i>Funding &amp; implementing partners</i>	<i>Aim</i>	<i>Technologies</i>	<i>Scale &amp; outcomes</i>
English in Action programme, Open Learning System Educational Trust (OLSET), <i>South Africa</i> 1993-	Funders: USAID, NORAID, DFID, MoE  Implementing partners: MoE, South African Broadcasting Corporation, OLSET, BBC	To provide structured curriculum and active learning approaches in English language development for the classroom which act as a model for innovative teaching practice. To provide teachers with meetings to discuss new approaches.	National & community radio broadcasting of interactive radio instruction (IRI) (with audiocassette copies), used in conjunction with print materials and teacher meetings.	See box 5 for outcome details.  By 2001 used in 11,000 primary school classrooms serving a potential 550,000 pupils.
Project for primary teachers, UNICEF and Ministry of Science, Education and Culture, <i>Mongolia</i> 1994-2001	Funding: UNICEF and Ministry of Science, Technology, Education and Culture.  Implementing partners: National Institute for in-service Teacher Education, The School of Educational Development	To support changes in curriculum content and teaching methods for grades 1-4. To create a more flexible delivery system for in-service training.	Print learning resources + radio (or audio copies) + some videos + meetings	Broad national reach – coverage expanded from 4 provinces in 1994 to half the country by 2000. 5,000 primary teachers participated and still more used the radio and print resources.  No available systematic data on impact on teaching methods or pupil learning gains. Content focused on integrated subject-teaching, multi-grade, child-centred teaching, and active learning methods  Low costs: 1 x 20 minute radio programme (+one repeat) = \$110 Production costs of learning booklets = US\$1 per copy.
Diploma in Information Technology, Universidad de la Frontera, <i>Chile</i> 1997-	Funding: Student fees	To teach primary and secondary teachers, via ICT, how to use ICT in their teaching. To create flexible delivery system for in-service training.	An entirely online programme for delivering materials, supporting interaction and providing access to databases.	169 participants 1998-1999. No available systematic data on impact on teaching methods or pupil learning gains. Quality assurance provided by university. Equivalency to face-to-face version of the course.

**8.4 System-building** – programmes aimed at enriching existing teacher education and educators and building capacity in the education system, e.g. for managers, inspectors, resource centre coordinators.

<i>Case</i>	<i>Funding &amp; implementing partners</i>	<i>Aim</i>	<i>Technologies</i>	<i>Scale &amp; outcomes</i>
MA Teacher Education, Open University Sri Lanka, <i>Sri Lanka</i> 2000-	World Bank + MoE for 1 <sup>st</sup> programme.  2 <sup>nd</sup> 'internationalised programme' -- development funding from COL and a sliding scale fee system where 'foreign' students pay higher fees than local students.	To provide professional development for teacher educators in teachers' colleges using new practitioner-oriented, problem-centred learning and critical reflection on practice.	Print-based distance education + meetings	Pilot stage -- too early to have evaluative evidence. 2000 course re-written to focus on learning activities rather than content, including a research project, action-based project or portfolio.
Distance Education Programme – District Primary Education II Programme (DEP-DPEP II), <i>India</i> 1997-	Funding: MHRD + multi- and bi-lateral donor aid  Implementing partners: National Council of Educational Research and Training + state agencies + DIETs + IGNOU	5-year programme to identify, produce and deliver district-targeted, professional development DE resources for personnel in primary education (e.g. Village Education Committee, resource centre coordinators, DIET personnel)	Range of technologies employed - print self-instructional resources, radio broadcasting (or audiocassette copies, Interactive TV + meetings	Over 12 different 4-7 day training teleconferences during 1996-2002 in 14 different states for resource centre staff. 2001 teleconference in Karnataka for 800 Resource Centre coordinators in 17 centres prompted 88 telephone responses and 219 fax responses to live lecturer/presenter.  Training inputs – print, audio and video mostly developed at district/state level in local languages and geared to local context.  Programme topics cover: Functions of resource centres, pedagogy issues, teacher resource materials. Training principals of all 20 District Institutes of Education and Training (DIETs).  No known evaluative data but the use of the materials in training programmes in Ghana, Namibia, Zambia and Uganda suggests they have proved useful. Translated into Portuguese for use in Mozambique and Brazil.
Commonwealth Secretariat, <i>several countries</i> , 1993	Funding: CommSec, UNESCO, SIDA, GTZ + MoE's	To provide training resources for school inspectors (new and serving) for a range of Commonwealth developing countries	4 self-study print modules	

Table 9: Classroom curriculum and learning resources

9.1 Highly structured classroom interventions				
<i>Case</i>	<i>Funding &amp; implementing partners</i>	<i>Aim</i>	<i>Technologies</i>	<i>Scale &amp; outcomes</i>
Escuela Nueva, <i>Colombia</i> 1975 -	Funding: UNICEF, World Bank, NGOs (development costs 1970-1985) + MoE	Structured whole school/system approach, covering full 5 year cycle, specifically to support pupils, teachers and community stakeholders in under-resourced, rural, multigrade schools.	Highly-structured, centrally produced learning materials + libraries	See box 6 for outcome details.  1975 – 500 EN schools, 1985 – 8,000 early 1990's – over 20,000
Formal Schools Initiative, Bangladesh Rural Advancement Committee (BRAC), <i>Bangladesh</i> 1999-	Funding: Numerous NGOs, multi- and bilateral donors + MoE  Implementing partners: + numerous local NGOs	Establishment of 11 BRAC formal rural schools (building on success of BRAC non-formal schools)  Structured whole school/system approach, covering full 5 year cycle, to support pupils, teachers and community stakeholders in under-resourced, rural and/or poor, multigrade schools.	Structured BRAC print learning materials for pupils, teachers and community stakeholders. Used in conjunction with government textbooks.	11 formal rural BRAC schools established.  No currently available evaluative data on this aspect of BRAC programme.
English in Action, Open Learning Systems Educational Trust (OLSET), <i>South Africa</i> 1993- Under the Kapok Tree, Guinean National Institute for Pedagogy and Action Research (INRAP), <i>Guinea</i> 1999-	Funding: various bilateral aid (USAID, NORRAD, DfID), MoI, MoE.  Implementing partners: BBC, SABC. Funding: USAID  Implementing partners: INRAP + EDC	Structured language development classroom activities  Structured classroom activities covering all curriculum subjects grades 1-6	Nationally broadcast Interactive Radio Instruction (IRI) + print classroom resources.	See box 7 summarising known outcomes for all three programmes. By 2001 – broadcasts used by 11,000 schools (550,000 pupils) on national level. See box 7.  Estimated numbers in 2001: Pupils – 900,000 Teachers – 20,000 Schools – na
Haitian Foundation for Private Education (FONHEP), <i>Haiti</i> 1995-	Funding: USAID  Implementing partners: FONHEP + EDC (+ since 1997 other USA NGOs – AED and the Mitchell Group)	Structured curriculum classroom activities in Maths and reading (delivered in Creole)		See box 7. Pilot – 40 public and private sector schools in 5 departments (2218 pupils). Since 97 – 429 nationwide schools. Grade 2 and 3 – 84 maths, 63 Creole reading programmes, 4 <sup>th</sup> grade programmes under development.

## 9.2 Curriculum resources

<i>Case</i>	<i>Funding &amp; implementing partners</i>	<i>Aim</i>	<i>Technologies</i>	<i>Scale &amp; outcomes</i>
Instructional programme for primary school students (SRPM-SD), Centre for Communication Technology for Education and Culture (PUSTEKKOM), <i>Indonesia</i> 1998-	Funding: MNational Ed + various multi- and bilateral donor agencies  Implementing partners: PUSTEKKOM, TVRI Foundation, and PT. Cipta Televisi Pendidika.	To provide and distribute radio programmes or audiocassette resources in curriculum subjects for 4 <sup>th</sup> , 5 <sup>th</sup> and 6 <sup>th</sup> grades. To train teachers how to integrate them into classroom teaching/learning processes.	Radio broadcasting and audiocassettes	2003 – 11,830 audiocassettes (copies of 70 masters), distributed to 169 schools in 21 provinces. 2003 – 508 Ed radio programmes.  Costs - total budget US\$25,511 in 1998-1999 for planning, development and production of 70 master copies, reproducing, monitoring and supervision.  Survey among teachers and students showed an 'overwhelmingly positive' response. National coverage over 27 provinces. Evaluations at junior secondary level only.
School-based instructional Television (STV), PUSTEKKOM, <i>Indonesia</i> 1988-	Funding: MoNational Ed + various multi- and bilateral donor agencies  Implementing partners: PUSTEKKOM	Provides scheduled school TV broadcasting, centrally-produced, twice daily in range of curriculum subjects. Provides television sets for schools.	TV broadcasting – via local radio stations	

### 9.3 Computers in classrooms

<i>Case</i>	<i>Funding &amp; implementing partners</i>	<i>Aim</i>	<i>Technologies</i>	<i>Scale &amp; outcomes</i>
SchoolNet Africa, operating in <i>South Africa, Botswana, Lesotho, Namibia, Zimbabwe, Zambia and Uganda</i> 1997	Funding: initially NGO-funded for small-scale national start-ups but governments and education-related ministries now earmarking resources for new schoolnets and ICT infrastructure on a national level.	Implementing ICT capacity in primary (and secondary) schools networks (min 5 schools) for regular communication and interaction on learning initiatives.  Bottom-up ICT infrastructure capacity building.	ICTs	Namibian SchoolNet: Internet access to 350 school (2001-2003) of which around 150 were primary level.  Pan-African SchoolNet meeting in 2003: Serious urban/rural disparities ICTS mainly used for class and school admin (lesson plans, worksheets) and not as a teaching tool. Limited skills base among teachers hampers integration of ICT into curriculum. Need to integrate ICT into teacher training. Appropriate evaluation tools for SchoolNet models and technologies are required.
Enlaces Network, <i>Chile</i> 1992	Funding: MoE + World Bank loans + some private sector involvement (e.g. Apple, IBM, Telefonica CTC Partners: Pilot at Catholic University of Chile then adopted nationally by MoE + 35 Universities (formed the national Support Network), Institute for Information Technology in Education and the Research and Development Center, University de la Frontera,	Implementing ICT capacity in primary schools on national basis with teacher training and software development aspects.  Creating linked network of schools for learning activities based around curriculum.	ICTs	See box 8 for outcome details.  By 2002 -- reaching 5942/74% of primary schools and covering 96% of primary students. Providing 3 yrs of training to 20 teachers per school, for an approximate of 80,000 teachers (70% of all teachers);

## Annex 2

### School leadership and management

#### **Box 1: African Network for Education at a Distance (RESAFAD), Burkina Faso 1997-2001**

More than 80 percent of Burkina Faso's population is rural so that schools are widely scattered, often a long way from district education offices. The need to develop in-service programmes for headteachers was recognised at Ministry level in 1992 and carried forward by RESAFAD in a joint programme initially involving Burkina Faso, Guinea, Mali and Togo. DE provided a means for in-service professional upgrading. The programme used ICTs to help the process of course development but used print self-study modules, coupled with meetings of headteachers, to reach its scattered audience. Content centred on pedagogy, practical teaching, educational principles and values, environment and the local community, concentrating above all on school management.

Over four years it reached about a quarter of Burkina Faso's headteachers. Very few dropped out of the course and headteachers who had gone through the course reported favourably on it, identifying ways in which it had resulted in changes in how they managed their schools. They had valued the opportunity of face-to-face meetings to share experience and broaden their understanding of the ground covered by the programmes. There is some evidence from reports of school inspectors of more efficient school management as a consequence of the course. The programme also had some side benefits, in developing national capacity in DE, including the writing of materials, and in promoting international cooperation in this area. However, the programme's dependency on external funding appears to have led to financial uncertainties and a struggle for funding, particularly state funding. Despite the varied evidence of success, the programme was not seen as having sufficient priority for its continuation to be funded from national resources.

Source: Perraton, H., Robinson, B. and Creed, C. 2001 *Teacher education through distance learning: technology, curriculum, cost, evaluation*, Paris: UNESCO Available on <http://unesdoc.unesco.org/images/0012/001242/124208e.pdf>

### Initial teacher education

#### **Box 2: National Certificate in Education Programme, National Teachers' Institute, Nigeria 1990-**

The NTI programme provides an alternative, equivalent route to initial teaching qualifications for working primary teachers in a high population country very short of qualified teachers and where conventional college output cannot meet demand. It combines print self-study materials, tutorial, field trips and supervised teaching practice over 4 years (the college-based equivalent takes 3). Learner support is provided at weekend and in school holidays in 220 study centres around the country. Learners have four weeks supervised teaching practice per year carried out by educators from local higher education institutions.

The programme has made a significant numerical impact on teacher supply in Nigeria. It has steadily rising enrolment rates: 7,324 (1994-97 cohort), 7,581 (1995-98), 8,398 (1996-99) and 8,521 (1997-2000) but these are matched by significant drop-out rates 27% (1994-97 cohort), 30% (1995-98), 35% (1996-99) and 39% (1997-2000). Reasons for drop-out include problems in the quality of learner support. Study centres are under-resourced and overstretched and attendance often entails long journeys. The activities provided there tend to mimic the formal teaching practices eroding intentions to provide opportunities for interaction between learners and teachers.

Costs: Evidence suggests an average cost per graduate in 1999 of US\$228 which includes loss through drop-out. This compares with a unit cost per graduate in a regular college of education of US\$317 (1998), US\$469 (1999), US\$529 (2000).

Source: Perraton, H., Robinson, B. and Creed, C. 2001 *Teacher education through distance learning: technology, curriculum, cost, evaluation*, Paris: UNESCO Available on <http://unesdoc.unesco.org/images/0012/001242/124208e.pdf>

## Continuing professional development (CPD)

### **Box 3: Two examples of interactive TV technology**

Interactive video technology – sometimes known as one-way video, two-way audio or interactive narrowcasting. This teleconferencing network has been employed in India and Egypt, both high population countries, to address the difficulties of training large numbers of remotely located teachers simultaneously, as an alternative to the well-known weaknesses of the cascade approach. Studio-based educators make live one-way video presentations about different teaching areas – aided by pre-recorded video-clip demonstrations – to groups of teachers in scattered study centres. Learners have before and after activities around the presentation. They can pose direct questions to the distant teacher via telephone and fax links. Both examples make use of an existing infrastructure of centres: Gyan Darshan uses IGNOU's established network of study centres in different states while the Egyptian approach uses existing MoE premises in different governorates but also set up new Distance Training Centres, including 6 mobile units (to bring to women participants who would not travel long distances or where reaching centres created major problems).

#### **Gyan Darshan, Indira Gandhi National Open University, India 1996-**

In the Special Orientation for Primary Teachers Programme in 1996, 850 teachers at 20 distant centres undertook a seven-day course, during which 13 thematic areas were explored. These included areas such as techniques for multigrade teaching, using the blackboard effectively, physical education, developing mathematics competencies and language teaching. Achievement tests, designed as part of the project evaluation showed gains in competencies. In an experimental comparison between 3 modes of CPD (teleconferencing, face to face (F2F) teaching and F2F + video), teaching the same four primary level mathematical operations teleconferencing was found more effective in terms of: participant involvement, motivation and interest, the nature and quality of interaction between participants and experts and punctuality and adherence to schedule by participants.

Source: Phalachandra, B. nd A study of the relative effectiveness of alternative technology options for training primary teachers, unpublished report, Delhi, Distance Education Programme of DPEP-II.

#### **The Distance Training Network, Technological Development Centre, Egyptian Ministry of Education, Egypt 1999-**

An evaluation of a course for rural 'One classroom' female teachers which involved training 17,869 teachers using 10 programmes (about multigrade teaching skills, subject knowledge development, health issues) in 22 training hours showed the following outcomes: significant development of abilities, boosted female education in Upper Egypt and put across unifying concepts in the field of one-classroom schools.

Source: Perraton, H., Robinson, B. and Creed, C. 2001 *Teacher education through distance learning: technology, curriculum, cost, evaluation*, Paris: UNESCO Available on <http://unesdoc.unesco.org/images/0012/001242/124208e.pdf>

### **Box 4: Television-Plus: Journalism in the service of teacher development, Brazil**

A-Plus is a daily television series designed to stimulate and support primary and secondary teachers in Brazil, many of whom have low levels of qualification. The 15-minute daily programmes have a magazine format, combining general educational news with examples of real-life applications of the programme topic, e.g. methods of literacy teaching or using videos in the classroom. An education expert comments in a challenging way on the examples or presents arguments designed to lead viewers to reflect. Suggestions for further activities and references to other sources of information are given at the end of each broadcast. Follow-on activities and monthly meetings are organised around these programmes for teachers' groups that opt into the 'plus' part of the programme. 60 Community Officers mobilise viewers (especially teachers) at local levels after the program through a Community Mobilisation Network (CMN) and help teachers to exploit the activities in ways that are appropriate to local contexts. A bi-monthly Network Newsletter and a quarterly magazine are produced for viewers giving schedules and background reading. The content is determined by teacher interest rather than educational authorities and drawn from feedback drawn from the CMN, teacher unions, teacher colleges, associations and conferences.

Surveys reveal 13 million regular viewers, mainly teachers (about 60 per cent) but also parents, social workers, nurses and child carers. The Community Mobilisation Network currently includes 8,600 participating institutions (schools, hospitals and prisons). Schools are 90 per cent of participating institutions and serve a potential 1, 200,000 educators. So far, 40,000 teachers and educators have participated in training and other Network activities.

Qualitative studies in various settings revealed: programmes helped to bridge school-family relationships and triggered community activities, were used to train community leaders (e.g. ed for peace, sex education) and improve reading skills.

'Using A-Plus programmes to trigger a productive dialogue with the teachers of Milan Barbosa primary school, pedagogic advisor Valéria da Costa managed to improve the way reading and the school library were used, in the space of four months. A specific A-Plus series on 'School and classroom libraries' was the basis for starting new reading programmes and a motivating approach involving teachers and students. The eight teachers ended up starting classroom libraries. Da Costa observed major changes in the classroom management skills of teachers, in the commitment of students during reading time and in the motivation of teachers to develop effective reading skills in their students'.

Source: Perraton *et al.* 2001 - <http://unesdoc.unesco.org/images/0012/001242/124208e.pdf>

## Curriculum reform

### **Box 5: Interactive radio for supporting teachers of English as a second language**

*The Open Learning System Educational Trust, South Africa* - <http://www.sn.apc.org/olset>

This South African radio project, run by the NGO The Open Learning System Educational Trust (OLSET) has two audiences: primary school children and their teachers. Through the programme teachers improve both their own English and their teaching of it. The daily half-hour radio lessons introduce pupils (grades 1-3) to English through activities such as stories and songs and makes use of provided posters and classroom resources such as workbooks and comic readers. The majority of teachers speak English as their second, third or fourth language. Some have low levels of teaching qualification and are inexperienced in learner-centred approaches. The radio programmes offer teachers structured, well-designed and carefully graded language lessons which model active learning. They also involve teachers as partners in the teaching process by asking them to lead language development activities, such as games or pair-work. A teacher's manual is provided together with visits from programme coordinators who organise training workshops and teachers' groups, with discussion of how to teach the radio lessons, and how to link the programme with other areas of the primary school curriculum. OLSET's 'English in Action' Programme has grown from 14, 000 primary school pupils in 1994 to over 500,000 pupils and 11,000 teachers in 2001. The cost per pupil is about US\$1 a year, and per teacher, a little over US\$1. This includes the provision of radios (mainly battery-powered but some wind-up and solar-powered ones too).

Despite its success, the programme struggles to cope with the lack of a consistent policy on educational broadcasting at national and local level and difficulties in negotiating access to airtime. Programs are produced and recorded by OLSET but delivered through the South African Broadcasting Corporation, which provides free transmission. Problems with transmission in some locations have required the substitution of audio-cassettes, adding additional tasks and cost for the organisers.

Source: Perraton *et al.* 2001- <http://unesdoc.unesco.org/images/0012/001242/124208e.pdf>

## Curriculum and learning materials

### **Box 6: Escuela Nueva (New Schools), Colombia**

Escuela Nueva (EN) began as a pilot project in 1975 to improve the quality of rural schools in the coffee-producing region of Colombia, then it was adopted in 1985 as the national policy for rural primary education and, in a slightly adapted version, to poor urban schools in Cali (Valle) and Bogotá, the capital. It adopts a system-wide, whole-school approach to strengthening under-resourced, small single-teacher schools in four main areas: community involvement, the curriculum, teacher training, and management. A key element is taking multigrade teaching as the norm and building strategies that make the most of the situation. These include centrally-produced, self-study learner guides in four subject areas (language, mathematics, science and social studies) for pupils (from grades 2-5) working interactively in small groups (4-6) to free up the teacher's time for individualised support, the support of peer teaching, content based on both the national curriculum and the immediate rural context, the establishment of classroom study corners and seating arranged for group work, small donated libraries (700-1000 books), regular practice-centred workshops for teachers and a three-tier decentralised management system – central (MOE), regional and student government. The pedagogy attempts to change the role of teachers from frontal teaching to supporting groups of pupils learning by

themselves. The pedagogy promotes active learning, group participation, independent thinking and linking learning to practice.

**Outcomes:** The programme has scaled up from 500 schools (1976) to 17,000 schools (1990) reaching 900,000 students. Evaluations show modestly higher achievement results for EN pupils over those in the conventional system. A 1988 evaluation compared the 3<sup>rd</sup> and 5<sup>th</sup> grade in 168 EN schools and 60 traditional schools, with EN pupils scoring highest in all areas except 5<sup>th</sup> grade maths and creativity. Repetition and drop out rates were reduced significantly at 5<sup>th</sup> grade and repetition rates reduced among 3<sup>rd</sup> grade pupils. In 1975 participation rates in rural areas were 50% compared to 65% for the whole country. By 1992, based on 18,000 rural schools, participation rates had risen to 81% for girls and 78% for boys in these areas compared with 87% and 86% respectively in urban areas. This rise seems partially attributable to EN since over half of Colombian rural schools had adopted the model. Bolivia, Ecuador, Honduras, Guatemala and other Central and South American countries have adopted this system entirely or partly.

There has been significant impact is found on community organisation and participation in adult education, agricultural extension, athletic competition, health campaigns, and community celebrations when compared to traditional schools.

**Costs:** The per-student costs of \$120 compare with \$84 in the conventional system, reduced to 5-10% higher when based on an expansion to 20,000 schools. Extra costs are attributable to the supply of study guides (\$15 for one book for each of 4 subjects per child, useable for 4 years or £8.20 per child total), libraries (\$150-225 per school/class) and teacher training (\$82 per teacher), although these are offset by the fewer number of teachers required for the primary cycle

**Problems:** improvement of self-instructional textbooks and teacher training, teachers' salaries and working conditions are important variables left out. Quality is mixed particularly after going to scale – content once growing out of the immediate rural context has become increasingly standardised and not always in tune with rural life and several elements of the programme, e.g. supervisory visits not being maintained to regional level. Widespread expansion is linked to a deterioration of quality.

**Source:** Psacharopoulos, G. et al. 1992 'Achievement evaluation of Colombia's Escuela Nueva: is multigrade the answer?', *Policy research working paper no 896*, Washington: World Bank; Leggett, I. 2001 The Escuela Nueva of Colombia: different perspectives on an example of primary education reform, unpublished essay. Available on [http://k1.ioe.ac.uk/multigrade/escuela\\_nueva.htm](http://k1.ioe.ac.uk/multigrade/escuela_nueva.htm); Rugh, a. & Bossert, H. 1998 'Escuela Nueva in Colombia' in *Involving communities: participation in the delivery of education programs*, Washington: Creative Associates/USAID; Saito, Y. nd *Escuela Nueva (New School) in Colombia: a successful example of primary educational innovation in developing countries*, available on [http://k1.ioe.ac.uk/multigrade/occasional\\_papers.htm](http://k1.ioe.ac.uk/multigrade/occasional_papers.htm)

### **Box 7: Interactive Radio Instruction (IRI)**

A general picture of IRI would be:

Highly structured radio classes introduce to classroom-based primary pupils national curriculum subjects through activities such as stories and songs. Additional classroom support is added in the form of nationally distributed teachers' guides, student activity books, posters, and science kits. The radio programmes also act as a teaching tool for teachers introducing them to new learner-centred pedagogical approaches and structured, well-designed lessons which model active learning. Introductory workshop and regular meetings are organised to give teachers necessary pedagogical support to adapt to an interactive style of teaching that is quite different to traditional frontal methods. During the broadcast, teachers typically follow the instructions of the 'radio teachers', guiding children to sing songs, answer questions, manipulate objects, draw pictures, move physically, and work in small groups to solve problems. and also make use of provided posters and classroom resources such as workbooks and comic readers. Wind-up or battery-powered radios are supplied to each centre.

**OLSET See box 5**

#### **Under the Kapok Tree (INRAP), Guinea**

Weekly IRI broadcasts for primary grades 1-6 in French language, maths, science, community health + activity books + teacher training. 90 minutes of broadcasting per week during 22 weeks of the year and estimated participants number 900,000 pupils, 20,000 teachers. Informal evaluation suggests increased attendance at schools, children

enjoying the fun of the broadcasts, improvement in teachers' linguistic competence, subject knowledge and pedagogic methodology. Wind-up radios have had a 10-20% breakage rate

#### **Haitian Foundation for Private Education (FONHEP)**

Piloted in 1995 among 40 schools with 2218 students and then expanded since 1997 to 429 schools with training for 1279 teachers in how to effectively use audio and print classroom materials. It broadcasts 84 maths and 63 Creole reading lessons, from different radio stations around the country, throughout the academic year in different primary grades. As of 1997, two grades had been completed (2<sup>nd</sup> and 3<sup>rd</sup>) with the 4<sup>th</sup> in development. Choice of subjects justified by difficulties teachers and children encounter in those 2 subjects and is consistent with the bilingualism (Creole/French) situation of Haiti. Programmes represent the first experience of teaching reading in the mother tongue through radio.

External evaluation in mathematics and reading on two groups of students with same content showed that 'experimental group gained more than those from control group'. Qualitative research suggests some teachers felt exposure to new pedagogies had changed the learning process in their classrooms and led to better classroom management. Absenteeism has dropped particularly in rural areas. Other benefits seen as a uniform model for teachers and students, allows a degree of standardisation of themes and content in schools and thereby practically addressing huge inequalities in the quality of primary schools.

Sources: Celicourt, J. nd Interactive radio instruction in Haiti: an enriching experience, available on : [http://www.unesco.org/education/efa/known\\_sharing/grasroots\\_stories/haiti.shtml](http://www.unesco.org/education/efa/known_sharing/grasroots_stories/haiti.shtml);

USAID, Guinea INRAP project description [http://www.usaid.gov/gn/education/news/010701\\_interactiveradio](http://www.usaid.gov/gn/education/news/010701_interactiveradio)

#### **Box 8: Enlaces Network, Chile**

A national ICT capacity-building initiative in primary and secondary schools, established in 1992, and integrated into a national agenda for improving education. It involves building virtual networks of teachers and pupils in schools which receive hardware, educational software, and teacher training elements. A consortium of 35 universities throughout Chile provides technical support and teacher training. By 2002, the implementation had involved: providing 3 yrs of training to 20 teachers per school, for an approximate of 80,000 teachers (70% of all teachers); reaching 5942/74% of primary schools and covering 96% of primary students.

Primary schools allocated equipment and services based on number of students: up to 100 students received 3 computers and one printer; those with up to 300 were given 6 computers and 2 printers. Qualitative evaluation results show some positive outcomes in learning (students' increased reading capacity and comprehension with greater autonomy) and psychological effects (improved creativity, self-esteem, and concentration capacities). Increased motivation, greater focus on collaborative group work and problem solving rather than rote learning. Relationship between students and teachers became more collaborative. 1996 figures show average access to computer per student was 1 hour per week in small schools, 0.5 hours in large schools, although small group working can increase access to 1.5 -3 hrs.

Costs: total investment and recurrent costs range from US\$5,880 for a small school to US\$20,932 for a large one. The costs of facilities and equipment average 60% of total annualised costs, 40% go on training personnel, maintenance and communications. All schools had to pay their own operating and recurrent costs. Cost per student for a small primary school with 75 students averages \$78 per student annually, \$17 for recurrent expenditure. This is equivalent to about 8% of Chile's annual per student recurrent expenditures in primary education (\$213). Annual per student costs drop in large schools to \$21 per student and 4% of recurrent expenditures.

Problems:

Learning processes: a recognition that providing resources and training so far has not made any significant known impact on teaching and learning processes and that this (as of 2002) is the key aim now.

Extending Enlaces to small rural schools with a very different context (small populations, one teacher schools, high no of schools – 3,300 – despite small % population, difficult access, no regular telephone and often poor electricity connection). Rural Enlaces programme attempts to address methodological approaches and organisational approaches suitable for mixed grade, e.g. computers arranged as learning corners and a different teacher-training program.

Teachers: main concern is the heavy unpaid workload resulting from participation in Enlaces and lack of time, within

work, given to computer training.

Sustainability: after two years of initial support, schools must assume responsibility for sustaining the project. Few schools had created realistic budgets or funding mechanisms to upgrade equipment and software. Ministry budgets for schools would need to change in order to address their new needs.

Source: Laval, E. & Hinostroza, J. 2002 'Chilean Schools: the Enlaces network', *TechKnowlogia*, July-September 2002 pp 14-18; Potashnik, M et al. 1998 *Computers in schools: a qualitative study of Chile and Costa Rica*, in Educational and Technology Series Special Issue. Washington: World Bank Human Development Network; Rusten, E et al. 1999 Chile: building a national learning network, in LearnLink Case study Summary, Global Communications & Learning Systems, US Agency for International Development. [www.aed.org/learnlink](http://www.aed.org/learnlink)

## Annex 3

## Community mobilisation programmes

		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
	FEREMA		■	■		■	■							■	■	■
	PACEEQ		■	■										■	■	■
			2	2		1	1							2	2	2

		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
	RESAFAD	■	■		■	■				■	■		■			■
	COMMSEC	■	■		■	■				■	■		■			■
	SCHOOL M	■	■		■	■				■	■		■			■
	ED MANAG	■	■		■	■				■	■		■			■
	SCHOOL GOV	■	■		■	■				■	■		■			■
		5	5		5	5				5	5		5			5

		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
	NTI	■			■	■				■	■		■			
	PROFORMAC	■			■	■		■		■	■		■		■	
	CTVTC	■	■		■	■				■	■		■		■	
	UNISA	■			■	■				■	■		■			
	DTNET	■			■	■									■	
	GYAN D	■			■	■			■						■	
	APLUS	■			■	■		■	■						■	
	OLSET	■	■	■	■	■	■		■	■			■	■		
	UNICEF	■	■	■	■	■		■		■				■		■
	DIP IT	■		■	■											■
	MA SRI LANKA	■		■	■				■	■					■	
	DEP=DPEP II	■		■	■				■	■	■				■	■
	COMMSEC/INS	■	■	■	■				■	■	■				■	■
		13	4	6	14	10	1	3	6	9	6		5	2	9	4

		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
	ESCUELA		■	■	■	■	■	■	■	■	■	■	■		■	■
	BRAC		■	■	■	■	■	■	■	■	■	■	■		■	■
	OLSET	■		■	■	■	■	■	■	■			■	■		■
	INRAP	■	■	■	■	■	■	■	■	■	■		■	■	■	■
	FOHHEP		■	■	■	■	■	■	■	■	■		■	■	■	■
	INST PROG	■					■	■						■		■
	SCHOOL-B TV	■					■	■						■		■
	SCHOOLNET	■						■							■	■
	ENLACES	■						■							■	■
		6	4	5	5	5	7	9	4	4	4	2	5	5	4	9
		24	15	13	24	20	9	12	10	18	15	2	15	9	15	20

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