H. Perraton, B. Robinson & C. Creed (Eds.)

International Case Studies of Teacher Education at a Distance

Hilary Perraton, Bernadette Robinson
and Charlotte Creed (Eds.)

International Case Studies of Teacher Education at a Distance

**Studien und Berichte der Arbeitsstelle Fernstudienforschung
der Carl von Ossietzky Universität Oldenburg**

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Contents

Series Editors' Foreword

The ASF-Series on distance education grew out of a cooperation between the *School of Education* at the *Carl von Ossietzky University* and the *Center for Distance Education* (ZEF). ZEF has now been absorbed into the C3L (*Center for Lifelong Learning*), a much larger unit and, as a 'scientific center', with a more academic remit. The new center soon recognized the international profile of the series and decided to continue with it: both with the name and, in spite of its broader orientation as a *Center of Lifelong Learning*, with its focus on distance education. This signals that C3L appreciates the importance of distance education and that there is place for research on distance education within C3L.

The cooperation with the *School of Education* was at the time sought as part of a joint program between *Carl von Ossietzky University* and *University of Maryland University College* (UMUC): the online *Master of Distance Education (*MDE). The faculty teaching the program comprises a group of internationally renowned experts and writers in distance education. The ASF Series therefore had the collateral benefits of making core texts of these authors available to 'their' MDE students. Reflecting these authors' broad expertise in distance education the series covers a wide range of aspects in distance education starting from 'foundations in distance education' with contributions by Holmberg (Vol. 4: *Distance Education in Essence* and Vol. 11: *The Evolution, Principles and Practices of Distance Education*) and Peters (Vol. 5: *Distance Education in Transition: New Trends and Challenges*), covering aspects of costs and economics by Hülsmann (Vol. 2: *The Costs of Open Learning*) and Rumble (Vol. 7: *Papers and Debates on the Costs and Economics of Distance Education and Online Learning*), of student support by Brindley, Walti and Zawacki-Richter (Vol 9: *Learner Support in Open, Distance, and Online Learning Environments*) and of leadership by Beaudoin (Vol. 8: *Reflections on Research, Faculty and Leadership in Distance Education*). Many of these authors, being brought together as faculty within the MDE program, also contributed to Volume 6, *Reflections on Teaching and Learning in an Online Master Program*, edited by Bernath & Rubin.

This present volume (Vol. 12) can be read to some extent as a reality check on the almost simultaneously published papers from the 4th EDEN Research Workshop in Barcelona 2006. That volume (Vol. 13), edited by Bernath & Sangrà assembling research papers on competence development in online distance education and e-learning, explored distance education 'frontline issues'. Vol 12 now publishes a set of case studies commissioned by UNESCO and conducted by IRFOL (the International Research Foundation on Open Learning) on a mainstream issue such as teacher education and how distance education is used to support various aspects of teacher education (pre-service, in-service, continuing teacher education) in various parts of the world. Not surprisingly the use of ICT in teacher education in most parts of the world plays not a dominant role even where distance education approaches are used. Only the UK, Chile and Egypt case studies discuss the use of ICT-based approaches; all other case studies mainly show that the use of distance education in teacher training focuses on the use of mass media (print, radio and television). However, the book also demonstrates the often ingenious ways to overcome the intrinsic limitations of one-way-traffic media (Holmberg) by various

organizational models, which facilitate peer communication and communication with the teaching institutions (e.g. the Brazilian and one of the South African case studies).

The case studies are also of great value since they show the organizing hand of the IRFOL editors. Often collections of case studies leave the readers flabbergasted by a wealth of information and a variation of context which is difficult to absorb. Here writers were apparently given the clear remit to start with *Country Background* data and then cover aspects such as *Purpose*, *Costs*, and *Outcomes*. Obviously the availability of research data (all case studies are desk studies rather than based on new original research) varied greatly in the different cases, such that authors had to respond differently to these editorial requests. Nonetheless, this common structure invites the reader to compare and to appreciate how generic problems are handled in different contexts.

On the whole the book presents eleven case studies from ten different countries including Brazil, Burkina Faso, Chile, China, Egypt, India, Mongolia, Nigeria, UK, South Africa (two case studies) and dealt with various technologies ranging from print, television, radio, to videoconferencing and use of ICTs. More important than the media are often the organizational models in which media and audiences brought together for specific educational purposes.

Short summaries of the case studies were already published and are available both as UNESCO brochures and online under:

- Creed, C., Perraton, H., Robinson, B. (2002). Teacher education guidelines: Using open and distance learning. UNESCO. Retrieved September 27, 2007, from the World Wide Web: http://unesdoc.unesco.org/images/0012/001242/124208e.pdf

- Creed, C., Perraton, H., Robinson, B. (2002). Teacher education guidelines: Using open and distance learning: Retrieved September 27, 2007, from the World Wide Web:http://unesdoc.unesco.org/images/0012/001253/125396e.pdf

Given that the cases studies were frequently referred to in volumes of the *World Review of Distance Education and Open Learning* (co-published by RoutledgeFalmer and COL; e.g. volumes 3[1] and 5[2]) their full publication is overdue.

We are indebted to UNESCO for allowing us to make these case studies available to a wider audience and we especially want to appreciate the editorial efforts of IRFOL and the volume editors, Hilary Perraton, Bernadette Robinson and Charlotte Creed, who in addition to editing the book wrapped it up with two chapters, the Introduction and one drawing the Conclusions.

A special thanks also deserves Franziska Vondrlik who persevered in spite of her time being claimed by various units of expanding Center for Lifelong Learning.

The Editors

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[1] Robinson, B., Latchem, C. (Ed.). (2002). *Teacher education through open and distance learning* . London: COL/RoutledgeFalmer Press.

[2] Moran, L., Rumble, G. (Ed.). (2004). *Vocational Education and Training through Open and Distance Learning* (Vol. 5). London: Routledge Falmer.

Acknowledgements

These case studies form part of a series of research activities about teacher education by distance and were designed and supervised by the International Research Foundation for Open Learning (IRFOL) on behalf of UNESCO. They have provided the data from which two other parallel UNESCO synthetic studies are drawn and which are published separately. They provide, in themselves, the sort of detailed descriptive and evaluative data that is often absent and can help policy-makers make informed choices. It is a pleasure to acknowledge our indebtedness to the authors of the case studies.

The IRFOL authors have a major debt of thanks to Masako Saulière and Ratimir Kvaternik, both working at UNESCO as this work was planned and executed, for their consistently good advice and friendly help as it went forward. They would also like to thank Richard Halperin and Mariana Patru at UNESCO for their supportive editorial advice and both Mariana Patru and UNESCO for agreement that the studies should be published by the Carl von Ossietzky Universität, Oldenburg. The UNESCO activities drew from an earlier map of world experience in the field drawn up for the British Department for International Development (DFID). We are grateful to both agencies for their support. In carrying the work out we are grateful to our fellow researchers in many countries, to IRFOL's own associates, and to colleagues in UNESCO and at DFID as well as at a range of institutions in Britain, for their guidance and advice. Responsibility for the content and views rest with IRFOL and the authors.

The International Research Foundation for Open Learning was an independent non-profit research agency, registered as a charity under English law. IRFOL's purpose was to carry out research to guide policy on open and distance learning. Its work has now been incorporated into the von Hügel Institute of St Edmund's College, Cambridge.

We are grateful to Ulrich Bernath for enabling the studies to be published through the Carl von Ossietzky Universität, Oldenburg.

Hilary Perraton, Bernadette Robinson & Charlotte Creed
September 2007

Executive Summary

World shortages of teachers, and a concern to raise the quality of teachers, have led to the use of unorthodox approaches to teacher education. One of these is the use of open and distance learning. In order to guide decision makers on this UNESCO commissioned 11 surveys of recent and innovative practice. They were chosen to cover a range of technologies, of countries, and of applications to teacher training. The technologies include print, still dominant and important, videoconferencing, radio, and the use of computer communication. The countries include the giants – Brazil, China, Egypt, India, and Nigeria, two countries undergoing different transformations – Mongolia and South Africa – together with Burkina Faso, Chile and the United Kingdom. They have used open and distance learning for initial teacher training, for teachers' continuing professional development, to support curriculum reform, and for teachers' career development.

One of the outputs from the case studies is a companion publication: *Teacher Education Guidelines: Using Open and Distance Learning -Technology, Curriculum, Cost, Evaluation* (UNESCO, 2002) – which draws out practical conclusions for planning and implementing distance-education programmes and strengthening those that exist.

While these ground-breaking case studies widen our understanding of teacher training they point up the continuing shortage of good research; all too few studies have looked at the costs and the outcomes of various approaches to teacher education; few have asked the tough questions about how teachers' work in the classroom has changed as a result of their training. On technologies, there is limited experience of the use of new information and communication technologies within developing countries, for good practical reasons. Conclusions on these technologies are drawn from experience in Britain and Chile which stresses the need to build up a cadre of teachers who are comfortable and familiar with the technologies. Of the older technologies, radio is being used in interesting and effective ways to reach scattered audiences, effectively, and at modest costs.

Most important, there is some evidence of success in all four areas of teacher education and training. Where evidence on costs is available, these have generally been no higher, and sometimes significantly lower, than those of conventional education. China and Nigeria are using open and distance learning for initial teacher training, through specialist national institutions. The case studies in Brazil, India and South Africa show how different structures, using universities, the private sector, and nongovernment organisations, have developed programmes of continuing professional development. In order to support curriculum development, Chile has used the new technologies to develop capacity in those technologies while Mongolia and South Africa are supporting curriculum change through distance education. Burkina Faso offers an example of a programme to train headteachers, important both in itself and to demonstrate the potential for reaching the scattered audience of the next generation of headteachers and teachers' college staff. Programmes in each of these four areas have been funded, often from more than one source, using differing combinations of direct government finance, student fees, donor agency finance, and funding from the private and nongovernment sector.

HILARY PERRATON, BERNADETTE ROBINSON & CHARLOTTE CREED

1. Introduction

The world needs better teachers and more teachers. The Dakar World Education Forum revealed that there were still more than 100 million children out of school: they need teachers as the world moves towards the 2015 target of education for all. And we need to raise the skills of the existing 60 million teachers, too many of whom are untrained and unqualified. Beyond that, the skills and knowledge all teachers need are no longer fixed and familiar targets but moving ones. Teachers therefore need more opportunities than ever before to go on learning throughout their careers. One of the ways of strengthening the teaching profession is to use distance education or open and distance learning.

UNESCO commissioned this set of case studies because of demands from Member States for guidance on implementing programmes of distance education for teachers. The studies published here are intended to document experience of different programmes in a variety of contexts. A separate UNESCO publication in 2002 – *Teacher education guidelines: using open and distance learning – technology, curriculum, cost, evaluation* – draws not only upon these case studies but also on a wider field of research in teacher education at a distance.

More specifically we wanted to find out what open and distance learning was being used for in teacher education, how effectively it was working, and what methods it was using. In asking how effectively it was working, we wanted to examine its record in attacking the major problems confronting teacher education. There are two kinds of question here: about effectiveness and about relevance. To gauge effectiveness we were looking for data on completion rates and comparative costs and for any indicators of effects on the work of teachers in the classroom or the community. To assess relevance we wanted to discover whether the initiatives were a significant, sustainable, part of the service of teacher education or a small, peripheral, activity with little chance of making any major impact on the problems.

If open and distance learning for teachers is effective, and working on a big enough scale to be actually or potentially significant, then it is worth going on to ask how it is managed. We therefore went on to ask about the curriculum of open and distance learning initiatives, and the extent to which this matches that of other forms of teacher education and professional development. We also looked at organisational structures, and the kinds of organisations that provide teacher-education programmes, and the different patterns of funding. We looked at the technologies, ranging from print to computers, and the relationship between work done through the technologies and work done face-to-face, including all-important issues about classroom practice.

Educational Needs and Problems

Many countries still do not have enough teachers. In some, the expansion needed in the teaching force is far beyond the capacity of traditional colleges. The supply of teachers is also adversely affected in countries where retention rates are low for newly trained

teachers or where a significant numbers of teachers are being lost through HIV-AIDS or in rural areas which have difficulties in recruiting and retaining teachers.

Teacher quality is an issue in most countries. Many teachers are untrained or underqualified or teaching subjects in which they are not qualified or trained. In addition, teachers face a widening range of demands and roles. National governments, international organisations and specific circumstances continually set new goals: gender parity by 2005 and universal basic education by 2015; inclusive education; education for democracy, peace and social cohesion; multi-grade teaching; increased accountability for achieving learning targets; the development of learners who are self-managing and independent, skilled in critical thinking and problem solving, equipped with life-skills; the preparation of learners who are competent for knowledge-based economies, capable in the use of information technology; and the expansion of teachers' roles to include social work in communities where child-headed households and orphans are common as a result of HIV-AIDS.

The attention given to teacher education and their continuing professional development has in many cases lagged behind that given to other parts of the education system. Some countries lack a policy for it, though the importance of teachers is emphasised in many international reports (e.g., UNESCO, 1998; UNESCO, 2000; OECD 2001). Although there is wide recognition that teacher education, training and professional development need to be integrated, in ways that operationalise lifelong learning for teachers, the resources allocated to it are usually inadequate and the opportunities too few. In some countries teachers can expect one week's in-service professional development once every five to ten years. On average, countries spend around one per cent of their annual education expenditure on the continuing professional development of teachers (business and industry typically spend 6 per cent on staff development).

All of this creates new challenges for teacher education and continuing professional development: the need to find ways of using existing resources differently, of expanding access to learning opportunities at affordable cost, of providing alternative pathways to initial teacher training, of drawing on new constituencies of the population to work as teachers, of using technologies appropriately to enrich a teacher's context and support practice, of stimulating and supporting teachers' active learning and of reconceptualising the traditional organisation of initial teacher education and continuing development.

Can open and distance learning respond to these challenges? The case studies here offer some answers, in describing a range of uses of open and distance learning for both initial and continuing teacher education, using a variety of technologies.

The Case Studies

Initial teacher education and training is the programme of studies which leads to qualified teacher status according to the official standards of a country. It is the basic or first level of qualification for a teacher. It may be taken as a pre-service programme (before a trainee teacher begins work as a teacher) or an in-service one (while an untrained teacher is working as a teacher).

Continuing professional development enables teachers to extend existing knowledge and skills and develop new ones. Some of this takes the form of long structured courses leading to formal qualifications (diplomas or bachelor's or master's degrees). Other forms are shorter, concentrate on skills in managing children's learning or curriculum change

and do not lead to additional qualifications. In some countries, qualified and unqualified teachers alike participate in continuing professional development. It may be provided as in-service activities (on-the-job learning) or out-of-school courses of varying length (off-the-job or in vacations).

We have categorised the case studies in four ways. First, some countries have used distance education to provide a route to initial qualifications for significant numbers of teachers, both new entrants to teaching and experienced unqualified teachers. The China Television Teachers College and the National Teachers' Institute in Nigeria have long experience of this approach and have become a recognised and institutionalised part of the regular education system in their countries. In a programme that reflects an official policy shift towards more school-based training, the Open University in Britain has run a school-based qualifying programme for graduates who want to enter teaching but have had no professional teacher training.

Second, initial teacher education is no longer seen as enough. Distance education is therefore also being used to raise the skills, deepen the understanding and extend the knowledge of teachers. Some programmes are broadly focused while others are targeted at specialist groups. Programmes are taken either by individuals or by groups of teachers who are encouraged to participate by their schools or their employers, as can be seen in these case studies. For example, a non-profit television station is taking the lead on supporting school groups in Brazil. In Egypt, the Ministry of Education supplies training to groups of teachers in training centres around the country by means of a videoconferencing network. In other cases, programmes are available for individual teachers who want to improve their skills and their status, often enrolling on an individual basis, and at their own expense. Indira Gandhi National Open University in India has a number of programmes of this kind of which its Certificate in Guidance is one. The University of South Africa also offers programmes on this basis. Their BEd programmes are for experienced underqualifed teachers and also new entrants to teaching, which serve to meet individual goals as well as contributing to the policy goal of a graduate teaching force. Some programmes are aimed at the upgrading of teachers' qualifications required by official policy as new standards are set in a country (as in China).

Third, distance education can have a role in programmes of curriculum reform which aim to change either the content or the process of education. In South Africa, the Open Learning Systems Educational Trust is using radio to improve the teaching of English, and to support teachers in this work. In Mongolia, radio and print are used across large distances to re-orient teachers to official changes in curriculum and teaching methods within a country in transition. In response to policy initiatives aimed at establishing the use of ICT in schools, the Universidad de La Frontera in Chile is using ICT to support teachers who are teaching these subjects.

Fourth, distance education has been used for teachers' career development. As they seek promotion, or aim for the next qualification level, or aspire to become a headteacher, or work in a teachers' college, or become an inspector, teachers need to acquire new skills. A multinational distance-education project in Burkina Faso has developed a training programme in school management for headteachers and aspiring heads.

These categories inevitably overlap: career development may be regarded as part of continuing professional development; it blurs a distinction between the initial education

of new recruits to teaching and of experienced but unqualified teachers. Some of the programmes have more than one audience, qualified and unqualified teachers, teachers studying for initial qualifications and those using the same programmes to upgrade their qualifications.

In general, distance-education programmes have been developed with varied intentions: of widening access to teaching qualifications; of disseminating good practice; of strengthening the education system as a whole by reaching not only teachers but the wider community; in enabling school-based training and professional development and as a means of strengthening the links between theory and practice, focusing on the school as a site of teachers' learning. The case studies – listed in table 1.1 – reflect these purposes.

Within the constraints of the eleven case studies we wanted to get a geographical balance, to look at the use of a variety of technologies, and to include programmes with differing purposes. A further constraint was that we were not attempting to commission or support original research: the case studies are mainly based on existing data.

We wanted generally to find researchers within the countries in which they were working (although we made exceptions in the case of Mongolia, where one of the planning team was currently working as a consultant, and Burkina Faso where the project was developed in association with RESAFAD, whose headquarters is in France). We also tried to ensure that authors had both a knowledge of the institution on which they were writing and an appropriate distance from it. In some cases we did this by seeking joint authorship from within and outside the institution. The Egyptian case study was adapted from a paper prepared for the E-9 Ministerial Meeting held in Beijing in August 2001. Our bias was towards developing-country experience but we were pushed by the technologies and the inherent interest of the case studies concerned to include two more developed countries; there is so little documented developing-country experience so far of the use of computer-based technologies in teacher education that it made sense to look also at Britain and Chile.

With the exception of Egypt, writers of the case studies were asked to write to the same brief and same timetable. Their submitted drafts were then shortened and edited by Anna Wilson-Nunn.

Background: Open and Distance Learning

Distance education has been used to teach, support and develop teachers for many years: UNESCO was a pioneer through its UNRWA/UNESCO Institute of Education which was training teachers for refugees forty years ago. While the success of programmes has varied, experience demonstrates that distance education can be used to enable teachers to learn and to gain qualifications. The use of new information and communication technologies has drawn new attention to open and distance learning and offers new possibilities.

Distance education has been defined as an educational process in which a significant proportion of the teaching is conducted by someone removed in space and/or time from the learner. Open learning, in turn, is an organised educational activity, based on the use of teaching materials, in which constraints on study are minimised in terms either of access, or of time and place, pace, method of study, or any combination of these. The term 'open and distance learning' is used as an umbrella term to cover educational

approaches of this kind that reach teachers in their schools, provide learning resources for them, or enable them to qualify without attending college in person, or open up new opportunities for keeping up to date no matter where or when they want to study. The flexibility inherent in open and distance learning, and the fact that it can be combined with a full or near full-time job, makes it particularly appropriate for the often widely-distributed force of teachers and school managers. Some open and distance learning programmes lead to a qualification, others do not; some are addressed to individuals and others to groups; some are tightly organised and others essentially a way of making learning resources available to teachers. All fall under this one umbrella of open and distance learning.

Table 1.1: The Case Studies

Category	Cases	Technologies
Initial qualifications		
Programmes leading to qualified teacher status.	China: reaching teachers through television	Television and video copies, some print, audio-cassettes, face-to-face classes or meetings.
	Nigeria: an alternative route to primary teacher qualifications	Print with face-to-face meetings.
	United Kingdom: using ICT to support school-based initial teacher education	Print, computer communications, face-to-face meetings, video and audio, written feedback on assignments.
Continuing professional development		
Programmes and activities extending teachers' knowledge, skills and expertise throughout a teacher's working life.	Brazil: Television-plus: journalism in the service of teacher development	Television and video copies, magazines, newsletters, telephone 'call-in' centre, face-to-face meetings.
	Egypt: continuing professional development of teachers by video conferencing	Interactive video (one-way video, two-way audio) conferencing to groups of teachers in distance training centres, print materials, tutor support.
	India: developing primary teachers' knowledge and skills in child guidance	Print, face-to-face meetings and some audio- and video-cassettes.
	South Africa: new routes to teacher education degrees	Print with some face-to-face meetings, audio- and video-cassettes and some small optional element of computer communications

Re-orientation of teachers for curriculum reform and change		
Supporting teachers in changing what they teach and how they teach it.	Chile: teachers learning to use information technology	Computer communications for an online programme, for delivering materials, supporting interaction, providing access to databases and submitting coursework.
	Mongolia: re-orienting primary teachers to new teaching approaches	Print and audio (radio and audio-cassettes), some videos and face-to-face meetings
	South Africa: interactive radio for supporting teachers of English as a second language	Radio programmes, audio-cassette copies, print and some face-to-face meetings.
Teachers' career development		
Programmes to extend the careers of qualified teachers.	Burkina Faso: professional development of headteachers	Print and face-to-face meetings.

Note: The technologies listed in table 1.1 are those used for delivering the programmes. More are used in developing the materials or, in some cases, in training tutors, and computers play a large role in materials development and production.

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ZHANG WEIYUAN & NIU JIAN

2   China: Reaching Teachers Through Television

Executive Summary

This chapter describes the provision of large-scale initial teacher education through a national distance-teaching institution, the China Television Teachers College (CTVTC), a part of the China Central Radio and Television University (CCRTVU) since 1994. Distance education is included in China's strategic planning for teacher education and plays a significant role in initial teacher education and continuing professional development.

Background

The People's Republic of China is situated in eastern Asia, bounded by the Pacific Ocean in the east. The third largest country in the world, it has an area of 9.6 million square kilometres, or one-fifteenth of the world's landmass. There are 23 provinces, five autonomous regions, four municipalities, and two special administrative regions (Hong Kong and Macao). According to the latest results of the fifth national population census conducted by the Chinese government in November 2000, the total population of the mainland of China is 1.26583 billion, which is about 22 per cent of the total population of the world. The urban population accounts for 36.09 per cent, while the rural population makes up the other 63.91 per cent (National Bureau of Statistics, PRC, 2001e).

The national language in China is *Putonghua* (the common language) or Mandarin, which is one of the five working languages in the United Nations. There are also hundreds of regional dialects in China. For example, Cantonese is one of the popular dialects in southern China. As a written language, Chinese has been used for 6,000 years.

China is a unified, ethnically diverse country, comprising 56 ethnic groups. The Han makes up 91.59 per cent of the total population, leaving 8.41 per cent for the other 55 ethnic minorities. China is also a multi-religious country. Buddhism, Taoism, Islam, Catholicism and Protestantism can all be found in the country, with the first three being most widespread. China has about 5.5 million Protestants and 3.5 million Catholics (*China Today,* 2001).

China's economy is made up of agricultural and industrial activities and various kinds of services. In 1998, 18 per cent of the GDP (value added) was in agriculture; 49 per cent in industry; 37 per cent in manufacturing; and 33 per cent in services (World Bank, 2000). Of course, the economic development in different parts of China is unbalanced. Generally speaking, the western regions and inland areas are less well-developed than the eastern regions and the coastal areas. At the moment, the Chinese government is launching a national campaign to develop the west with the purpose of quickly improving living standards there.

Table 2.1: China: National Data

Population (millions)	1,264.8	
Size ('000 km^2)	9,597 [a]	
GDP per capita (purchasing power parity US$)	3,617	
Human Development Index	0.718	
Educational data	*Primary*	*Secondary*
Teaching force	5,735,790	4,217,947
total '000		
'000 female	2,718,842	1,537,605
Gross enrolment ratio		
All students	123	70
Female	123	66
Pupil teacher ratio	24	17

(Source: UNDP, 2001; UNESCO, 2000; UNESCO, 2001); Notes: population, size, GDP and HDI figures are for 1999; education figures are for 1996; a: figure includes Taiwan, China

Since the late 1970s, when the reform and opening-up drive was initiated, China's national economy has developed at a fast pace, with a notable increase in national strength and greatly improved standards of living. Tables 2.2-2.4 below provide a general picture of these great changes.

Table 2.2: GNP and GDP Increase in China Since 1980
(Unit: RMB100 Million)

Year	GNP	GDP	GDP per capita
1980	4,517.8	4,517.8	460
1985	8,989.1	8,964.4	855
1990	18,598.4	18,547.9	1,634
1995	57,494.9	58,478.1	4,854
1999	80,422.8	81,910.9	6,534

Source: Adapted from Statistical Yearbook of P.R. China (2000a) (National Bureau of Statistics, PRC, 2001)

With regard to the emerging information and communication technologies, China has developed fast over the past two decades. According to the Ministry of Information Industry (MII, 2001a), by the end of 2000 there were over 145 million residential telephone users in China, 85 million mobile phone users and 16 million Internet account users. The number of mobile phones per 1,000 people was 10 in 1997 (*China Today*, 2001), but the number rose to 72 and 85 in December 2000 and June 2001 respectively (Ta Kung Pao, 2001). The corresponding number for personal computers was 6 in 1997 (World Bank, 2000), rising to 9.5 in 1999 (China Today, 2001). At the moment, the official charge for a dial-up Internet user in China is four *yuan* per hour for the first 60 hours. If surfing time goes beyond 60 hours, the charges will rise to eight *yuan* per hour. In addition, Internet users need to pay the local calling fee by using the telephone line.

The local calling fee varies in different parts of China. It is worth mentioning that there is 50 per cent discount on charges during non-peak hours for dial-up Internet users. Dial-up Internet users are charged half-price from 23:00-8:00 on working days and 0:00-24:00 on public holidays and at weekends. (MII, 2001b).

Table 2.3: Living Standards in China Since 1985

	1985	1990	1995	1999
Income (yuan)				
Net income per capita in rural families	397.60	686.31	1,577.74	2,210.34
Disposable income per capita in urban families	739.10	1,510.20	4,283.00	5,854.02
Annual average salary of an employee (yuan)	1,148	2,140	5,500	8,364
Consumption level (yuan)				
Residents all over China	437	803	2,236	3,143
Residents in rural areas	347	571	1,434	1,918
Residents in urban areas	802	1,686	4,874	6,750
Housing				
Square metres per capita in rural areas	14.70	17.83	21.01	24.23
Square metres per capita in urban areas	5.20	6.70	8.10	9.78
Entertainment				
Ownership of colour TV sets in every 100 urban family households	17.20	59.00	89.79	111.57
Ownership of TV sets in every 100 rural family households	11.74	44.44	80.73	100.59
Coverage rate of radio population (%)	68.3	74.7	78.8	90.5
Coverage rate of TV population (%)	68.4	79.4	84.5	91.7
Education				
Enrolment rate of primary-school-age children (%)	95.95	97.83	98.50	99.09
Number of university students in schools for every 10,000 people	16.1	18.0	24.0	32.8

Source: Adapted from Statistical Yearbook of P.R. China (2000b) (National Bureau of Statistics, PRC, 2001)

Table 2.4: Access to Electricity in Townships, Villages and Farmer Households in China in 1997

	Total number	Access to electricity	Access rate (%)
Townships	45,448	45,006	99.03
Villages	744,432	726,993	97.66
Farmer households	267,251,265	256,193,580	95.86

Source: Adapted from Statistical Yearbook of China Power (1998);

Thanks to the great achievements that have been made over the last 20 years, Chinese people now live a relatively comfortable life. According to the *White paper on population in China*

issued by the Information Office of the State Council in 2000, which was entitled 'China's population and development in the 21st Century', the number of people below the poverty line in China's rural areas had decreased from over 250 million in the late 1970s to 34 million by the end of 1999, down from 33 per cent to around 3 per cent of the total rural population. Poor people in rural areas have basically achieved adequate feeding and clothing. The average life expectancy in China has increased to 71 years. As for the illiteracy rate, the fifth national population census conducted in November 2000 indicates that of the total population of 1.26583 billion in the mainland of China, 85 million people are illiterate (i.e. people over 15 years of age who cannot read or can read very little). Compared with an illiteracy rate of 15.88 per cent in the 1990 population census (the fourth national census), the proportion has dropped to 6.72 per cent, down by 9.16 per cent.

Despite the great changes, which have been briefly illustrated above, it is worth emphasising that China is still a developing country with the largest population in the world. It has a huge population, but a weak economic foundation with relatively inadequate resources on a per-capita basis. China has its distinctive features and contexts. These will have to be taken into account when any policies concerning its economic and social development are made, including policies on education.

The Education System

Since the founding of the People's Republic of China in 1949, the Chinese government has established a centralised educational management and administration system. The central government exercises macro guidance and supervision of educational activities in the country, leaving the daily micro management to local governments at various levels. At the central level, the Ministry of Education is the supreme education administration body in China. It is chiefly responsible for formulating educational laws, regulations, guidelines and policies; overall planning of educational development; integrating and coordinating educational initiatives and programmes nationwide; and manoeuvring and guiding the work of the local educational administrative departments.

The local education authorities at various levels (province level, city/prefecture level, county level and township level) are mainly responsible for implementing the central educational policies promulgated by the Ministry of Education in the areas under their jurisdiction. At the same time, they are obliged to take care of their own local educational development, including making local educational development plans, implementing the plans and monitoring the progress and quality of local educational development.

China's education system of is basically composed of four components: kindergarten and primary education, secondary education (ordinary secondary schools, and vocational and technical schools), general higher education and adult education. The structure of the kindergarten and primary education sub-system normally follows a 3+6 pattern. Children normally enter kindergarten schools at the age of three and study for three years, before beginning six years of primary schooling at the age of six.

The secondary education sub-system includes two broad kinds of secondary schools: ordinary secondary schools, and secondary vocational and technical schools of various types. The age-span for secondary education is normally 12-18. Ordinary secondary schools are usually further divided into two stages: three years of junior secondary school for students aged 12-15, and three years of senior secondary school for those aged 15-18.

General higher education comprises junior college, bachelor's, master's and doctoral degree programmes. Junior college programmes usually last for two to three years, depending on different subject areas; bachelor's programmes last four years (five years for medical and some engineering and technical programmes); master's programmes last two to three years; and doctoral programmes three years. Students are normally admitted to junior college, bachelor's, master's and doctoral degree programmes by passing relevant national entrance examinations. The age-span for junior college and bachelor degree programmes is usually 18-20/21/22 depending on different lengths of the programmes enrolled. The entrants are mainly senior secondary-school graduates. At the end of a junior college programme, the successful student will be awarded a diploma in the subject area studied.

Adult education is essentially targeted at working adults, although in some adult institutions (such as the Radio and Television Universities) the student population might include some younger groups. Adult education covers multi-level programmes: higher education programmes, secondary education programmes, primary education programmes and even literacy programmes. These programmes may be degree-based or simply training-oriented. They are offered both by conventional universities, colleges and schools and by those institutions that specialise in adult education, such as Radio and Television Universities, staff training colleges, secondary schools for farmers, and so on.

To understand better the educational development in China over the last two decades, Tables 2.5-2.13 below provide some specific details. In these tables, regular institutes of higher education refer to the conventional junior colleges and universities, excluding those for adult higher education. Ordinary secondary schools include both junior secondary schools and senior secondary schools. The data sources are MOE (2000), CERNET (2001a; 2001i; 2001j) and *Statistical yearbook of P.R. China* (2000c) (National Bureau of Statistics, PRC, 2001).

Table 2.5: Number of Schools in China Since 1985

	1985	*1990*	*1995*	*1999*
Regular institutes of higher education	1,016	1,075	1,054	1,071
Ordinary secondary schools	93,221	87,631	81,020	77,213
Primary schools	832,309	766,072	668,685	582,291
Kindergartens	172,262	172,232	180,438	181,136

Table 2.6: Number of Full-time Teachers in China Since 1985 (10,000s)

	1985	*1990*	*1995*	*1999*
Regular institutes of higher education	34.4	39.5	40.1	42.6
Ordinary secondary schools	265.2	303.3	333.4	384.1
Primary schools	537.7	558.2	566.4	586.1
Kindergartens	55.0	75.0	87.5	87.2

Table 2.7: Number of Newly Admitted Students in China Since 1985 (10,000s)

	1985	*1990*	*1995*	*1999*
Regular institutes of higher education	61.9	60.9	92.6	159.7
Ordinary secondary schools	1,606.9	1,619.6	2,025.9	2,546.0
Primary schools	2,298.2	2,064.0	2,531.8	2,029.5
Kindergartens	n/a	n/a	1,972.4	1,617.5

Note: figures for kindergartens in 1985 and 1990 are not available.

Table 2.8: Number of Enrolled Students in China Since 1985 (10,000s)

	1985	*1990*	*1995*	*1999*
Regular institutions of higher education	170.3	206.3	290.6	413.4
Ordinary secondary schools	4,706.0	4,586.0	5,371.0	6,771.3
Primary schools	13,370.2	12,241.4	13,195.2	13,548.0
Kindergartens	1,479.7	1,972.2	2,711.2	2,326.3

Table 2.9: Number of Graduates in China Since 1985 (10,000s)

	1985	*1990*	*1995*	*1999*
Regular institutions of higher education	31.6	61.4	80.5	84.8
Ordinary secondary schools	1,194.9	1,342.1	1,429.0	1,852.7
Primary schools	1,999.9	1,863.1	1,961.5	2,313.7
Kindergartens		n/a	n/a	n/a

Note: figures for kindergartens are not available.

Table 2.10: Primary-School Enrolment Rate in China Since 1996

	1996	*1997*	*1999*	*2000*
Enrolment rate (%)	98.8	98.9	99.09	99.1

Table 2.11: Gross Secondary School, College/University Enrolment Rate in China Since 1996

	Age	*1996 (%)*	*1997 (%)*	*1999 (%)*	*2000 (%)*
Junior secondary schools	12-14	82.40	87.1	88.6	88.6
Senior secondary schools	15-17	31.43	40.6	n/a	n/a
Colleges and universities	18-21	7.07	7.6	10.5	n/a

Table 2.12: Rate of Primary-School and Ordinary Secondary-School Graduates Entering Schools of a Higher Stage in China Since 1996

	1996 (%)	*1997 (%)*	*1999 (%)*
Primary-school graduates	92.6	93.7	94.4
Ordinary junior secondary-school graduates	48.8	44.3	50.0
Ordinary senior secondary-school graduates	47.1	48.6	63.8

Table 2.13: Drop-out Rate of Primary-school and Junior Secondary-school Students in China in 1999 and 2000

	1999 (%)	*2000 (%)*
Primary School Students	0.90	0.55
Junior Secondary School Students	3.28	3.21

Education Funding

To understand the system for funding education in China, it might be a good idea to look at Tables 2.14 to 2.16 first. The data in the three tables are taken from CERNET (2001b; 2001g; 2001i; 2001k), Yang (2001) and the *Statistical yearbook of P.R. China* (National Bureau of Statistics, PRC, 2001).

Table 2.14: Expenditures on Education in China 1997-1999

	1997		*1998*		*1999*	
	(100 million yuan)	*%*	*(100 million yuan)*	*%*	*(100 million yuan)*	*%*
Total expenditures on education (all sources)	2,531.73	100.00	2,949.06	100.00	3,349.04	100.00
Government total expenditures on education	1,862.54	73.57	2,032.45	68.92	2,287.18	68.29
Government budgetary expenditures on education	1,357.73	53.63	1,565.59	53.09	1,815.76	54.22

Table 2.15: Sources of Education Funding in China in 1998 (Unit: RMB 100 Million)

	Total amount of funding	Government total expenditures	Government budgetary expenditures	Social groups and individual citizens' expenditures	Donations and raised funds	Tuition fees and other miscellaneous fees	Other funds
Country total	2,949.0592	2,032.4526	1,565.5917	48.0314	**141**.8537	369.7474	356.9741
Central level	392.8264	260.7645	199.6666	n/a	8.4125	38.8174	84.8320
Various local levels	2,556.2328	1,771.6881	1,365.9251	48.0314	133.4412	330.9300	272.1421

Source: Statistical yearbook of P.R. China (National Bureau of Statistics, PRC, 2001)

Table 2.16: Total Government Expenditure on Education as a Percentage of GDP in China From 1995 to 2000

Year	*1995*	*1996*	*1997*	*1998*	*1999*	*2000*
Percentage	2.42	2.44	2.49	2.55	2.79	2.87

Tables 2.14 and 2.15 above show that China's educational system has the government as the major investor and social partners and individuals as co-investors. Financial allocation from the central government and the local governments at all levels is still the major source of funding. Meanwhile, a number of other non-governmental sources have been introduced. Generally speaking, funds under the direct control of the central

government for schools come from the central financial pool; schools controlled by local governments are supported by local finance. Funds needed by schools operated by private entities are raised by the sponsors themselves, including collecting tuition fees from students and soliciting contributions from society (CERNET, 2001g).

Table 2.16 indicates that funds for education have increased on a yearly basis in China, which implies that the Chinese government has attached greater importance to education. However, it should be remembered that China is still a developing country with the largest population in the world. The education funding provided so far can hardly meet the increasing demand of the population.

According to the UNESCO *World education report 1998*, educational expenditure in China as a percentage of GNP decreased from 3.10 per cent in 1990 to 2.45 per cent in 1995. This figure rose to 2.47 per cent and 2.55 per cent in 1996 and 1998 respectively. But these figures are still lower than the international average of 4.9 per cent, and they are not even comparable to the average figure in less-developed countries (4.1 per cent). According to CERNET (2001k) and Yang (2001), the proportion of national budgetary educational fund in fiscal expenditures in China was 14.49 per cent in 1999.

Compared to other countries, public expenditure on education per person and per pupil has been low in China as well. In 1998, the public expenditure on education in China was RMB 167 per person and RMB 946 per pupil. The two figures for Japan were JPY 200,000 and JPY 930,000, and for France FF 8,050 and FF 28,100. The international average was US$ 241 per person and US$ 1,273 per pupil in 1995. These figures are over 11times greater than China's figures.

Teacher Education

Teacher education in China has already existed for a century since the establishment of the Teachers' College of Nan Yan Public School, the Teachers College of Metropolitan University and the Tong Zhou Normal School at the end of the 19th century and the beginning of the 20th century. Since then teacher education has followed a tortuous road toward its development into a comparatively complete system. Nowadays, China has built up a national teacher education system with independent teacher-training institutions as the principal components and other educational organisations playing a supplementary role (CERNET, 2001c).

Teacher education in China is composed of two parts: pre-service education and in-service training. Four-year teacher-training institutions of higher education (normal universities), three-year teacher-training colleges and secondary teacher-training schools are primarily responsible for pre-service education. Respectively, they train teachers for senior secondary schools, junior secondary schools and primary schools (kindergartens and special education institutions). By contrast, province/city/prefecture-level educational colleges and county-level in-service teacher-training schools respectively provide in-service training for teachers of secondary and primary schools (kindergartens).

Apart from the above-mentioned normal universities, teacher-training colleges, secondary teacher-training schools, province/city/prefecture-level educational colleges and county-level in-service teacher training schools – all of which are independent specialised teacher-training institutions in China – other general higher-education institutions and adult-education institutions (e.g. the Radio and Television Universities) are also involved

in pre-service teacher education and in-service teacher training for primary and secondary schools. The normal practice in these latter institutions is to have a special department or section within their organisational structure that deals exclusively with teacher education, or they include programmes of teacher education in their curricula (Chen, 2001; CERNET, 2001c). Table 2.17 below provides some information about specialised teacher-training schools in China in 1998.

Table 2.17: Specialised Teacher-training Schools in China in 1998

	Number of schools	*Enrolments*	*Freshmen*	*Graduates*	*Teachers*
Pre-service teacher education					
Normal universities and colleges	229	693,600	251,100	196,800	76,600
Secondary teacher-training schools	875	921,100	319,300	305,800	6,340
SUB-TOTAL	1,104	1,614,700	570,400	502,600	82,940
In-service teacher training					
Educational colleges	190	212,000	82,200	66,200	18,700
In-service teacher-training schools	2,087	371,000	121,600	168,200	46,300
SUB-TOTAL	2,277	583,000	203,800	234,400	65,000
TOTAL	3,381	2,197,700	774,200	737,000	147,940

(Source: Adapted from CERNET (2001c)

General higher teacher-education institutions aim mainly at the training of secondary-school teachers. In 1998, there were 229 general higher teacher-education institutions in China with an enrolment of 693,600 students (cf. Table 2.17). The normal universities and teacher-training colleges enrol graduates from senior secondary schools. Generally, four-year university programmes aim at training senior secondary-school teachers, while two- or three-year college programmes (the length depends on the nature of the subject areas) mainly aim to train teachers for junior secondary schools. In addition, postgraduate programmes are offered in general higher teacher-education institutions too. Meanwhile, these institutions are also playing an active role in providing in-service training for secondary-school teachers (CERNET, 2001c).

Secondary teacher-training schools mainly train teachers for primary schools, kindergartens and special schools (i.e. schools for the deaf-mute, blind and mentally handicapped children). In 1998, there were 875 secondary teacher-training schools in China with 921,100 enrolments (cf. Table 2.17). Out of these 875 schools, 811 were regular secondary teacher-training schools, 61 were for pre-school education and three for special education. These secondary teacher-training schools enrol graduates from junior secondary schools, and offer either three- or four-year programmes, depending on different subject areas. The courses are usually made up of four parts: compulsory courses, optional courses, teaching practice and extra-curricular activities. The successful graduate will be awarded a certificate in secondary teacher education (CERNET, 2001c).

It is worth pointing out that when students graduate from normal universities, teacher-training colleges, or secondary teacher-training schools, they usually get their first teaching posts either by government allocation, or by themselves applying to schools in different places.

In-service education for primary- and secondary-school teachers refers to the training/ education of those people who are currently holding teaching posts in primary and secondary schools. In-service education is also called continuing education for teachers, or in-service teachers' advanced studies.

In-service training of teachers in primary and secondary schools is the responsibility of the teacher education departments/sections of the educational authorities at all levels. The training can be divided into degree and non-degree education. Degree education includes not only the qualification make-up education for in-service teachers without qualified certificates but also the upgrading programmes for in-service teachers with qualified certificates (CERNET 2001c). The training takes the form of both full-time and part-time training. The length of the training varies greatly, depending on the teachers' needs on the one hand, and the programmes and budget available on the other (Chen, 2001).

Teacher Qualifications

According to the *Teachers' law of the People's Republic of China (Article 11)*, promulgated in 1993, the qualifications required for teachers at different levels of schooling are stipulated as follows (CERNET, 2001f):

Table 2.18: Teacher Qualifications Required at Different Levels of Schooling in China

School types	*Qualifications*
Kindergartens	Graduates from secondary pre-school teacher-training schools or above
Primary schools	Graduates from regular secondary teacher-training schools or above
Junior secondary schools	Graduates from teacher-training colleges or from other general colleges and above
Senior secondary schools	Graduates from normal universities or from other general universities and above
Universities and colleges	Postgraduates or graduates from BA-equivalent programmes

According to Yang (1998), the percentage of qualified primary and junior/senior secondary school teachers rose from 49.8 per cent, 12.7 per cent and 35.9 per cent respectively in 1980 to 94.6 per cent, 83.4 per cent and 63.5 per cent in 1998. However, the number of unqualified teachers was still high in 1998: 315,000 for primary schools, 506,000 for junior secondary schools and 235,000 for senior secondary schools. These numbers (a total of 1,056,000) accounted for about 11 per cent of all primary and secondary school teachers (9,516,000) in 1998.

On the other hand, the State Council of P.R. China in 1999 approved the *Action scheme for invigorating education towards the 21st century*, which was proposed by the Ministry of Education in 1998 and was intended to function as an official document guiding the overall educational development in China in the new millennium. In the action scheme, a project entitled 'Gardeners' promotion project across the centuries' was initiated with the exclusive purpose of improving the quality of the existing teachers. According to the

project initiative, around the year 2010, in areas with the necessary conditions, full-time teachers in primary schools should have had at least two years' post-secondary education and should possess a college-level diploma. Those of junior secondary schools should have completed first degree-level undergraduate education. In economically developed areas, a certain percentage of full-time teachers and principals in senior secondary schools should have a Master's degree (MOE, 1999). In terms of non-degree in-service training, the project proposes that in three years' time, job-related training should be provided through different channels to principals and full-time teachers at all kindergartens, primary schools and secondary schools in China. The objective is to provide no fewer than 240 hours of training to kindergarten, primary- and secondary-school teachers in most regions. The teachers in poor areas should receive at least one structured training session, the contact hours of which should be no fewer than 40 hours (Yang, 2000).

So, in terms of both degree education (qualification make-up education and upgrading programmes) and non-degree training, there is indeed a lot of work to do in the area of in-service teacher education at present and in future. The accomplishment of such challenging tasks will have to involve both specialised and non-specialised teacher-training institutions, conventional education institutions and distance-education institutions.

Distance Education

Distance education in China has evolved through three stages: correspondence-based education, broadcasting/TV-based education since the 1980s, and advanced distance learning based on information and Internet technologies since the 1990s (CERNET, 2001d). The third stage is of course still in its early stages, but is witnessing a rapid development in China.

Distance education in China is essentially offered by two types of educational institutes: single-mode open universities, and distance-education colleges/schools/departments/ sections in conventional universities. The representative example of the former type is China Radio and Television Universities (RTVUs). The latter type might be given different names in different conventional universities, such as adult education college, correspondence education department, online learning institute, and so on.

China Radio and Television Universities (RTVUs) are the equivalent of the Open University in Britain. They are dedicated distance-education institutes that offer multi-media courses to distance learners (mostly working adults) across China. The courses are delivered via media such as radio, television, printed texts, audio-visual materials and computer software. Founded in 1979, China's RTVUs have since developed into a nationwide distance-education network. The network corresponds to the four-tier governmental system in China. At the central level, there is China Central Radio and Television University (CCRTVU). At provincial level, each province (except Tibet) has its own provincial radio and television university (PRTVU). At city or prefecture level, each city or prefecture has its own branch school. At county level, each county has its own study centre. The four-tier RTVUs have formed a nationwide distance-education system in China, reaching almost every corner of the country. According to the figure provided by ICEM of CCRTVU (1999), the number of RTVUs at different levels in China and the number of teachers within the whole system are as follows:

Table 2.19: China's RTVU System

Administration level	Name	Total number
Central	CCRTVU	1
Provincial	PRTVUs	44
City/Prefecture	Branch schools	841
County	Study centres	1,742

Table 2.20: Teachers at China's RTVUs

Full-time	Part-time	Total number
26,712	20,389	47,101

Source: Education statistics yearbook of radio & TV universities in China 1998 (Information Centre of Educational Management (ICEM) at CCRTVU, 1999)

The Chinese RTVU system is run and operated at different governmental levels, but with CCRTVU playing the role of academic management centre in overall planning and centralised supervision. CCRTVU, which is directly under the leadership of the Ministry of Education, is designated as the 'quality assurance unit' of the system to ensure the system's overall educational quality. It is primarily responsible for producing subject curricula and course syllabi, producing course materials, conducting staff training and setting the end-of-course national examinations for the compulsory courses. PRTVUs and their subsidiary branch schools and study centres are under the leadership of their respective educational authorities. They are in charge of enrolling students and putting into practice the teaching plans set by CCRTVU. As a big family, each level of RTVUs is under the leadership of the higher-level RTVUs in terms of academic administration, with CCRTVU being the leading body and the headquarters of the entire system. Such an organisational and administrative structure has guaranteed the effective operation of the RTVU system in China (Niu & Ding, 1997).

In order to ensure the overall educational quality control within the RTVU system, five unified academic policies have been enforced throughout the system from the very first day it was set up in 1979. The policies are: unified speciality curriculum, unified course syllabus, unified multi-media course materials, unified course timetables and unified course assessment. To be more specific, CCRTVU is normally in charge of courses that cover no less than 60 per cent of the total credits of a subject programme or a speciality. The courses that fall into this category are often known as compulsory courses. For these compulsory courses in a subject programme or speciality, CCRTVU provides course syllabi, materials, timetables, assessment methods and standards, which are all unified. Local RTVUs in different parts of China follow the compulsory courses with the same course materials and the same teaching requirements. At the end of each semester, CCRTVU administers unified exams for each of the compulsory courses with the same marking criteria (Niu & Ding, 1997).

The optional courses, which can cover a maximum of 40 per cent of the total credits of a subject programme or a speciality, are usually determined by PRTVUs themselves. PRTVUs are responsible for these optional courses, including the course syllabi, course

materials, timetables and examinations. In case PRTVUs fail to provide a certain optional course, CCRTVU will then step in and provide these courses as the compulsory ones (Niu & Ding, 1997).

At the moment, the academic departments at CCRTVU include:

- Foreign Languages and Foundation Courses Department
- Chinese Language & Literature and Law Department
- Department of Economics and Management
- Department of Science and Engineering
- Department of Agriculture and Medicine
- China Television Teachers College (CTVTC)
- College of Continuing Education
- China Liaoyuan Radio and TV School
- Central Radio and TV Secondary Vocational School.

Up to 1999, Chinese RTVUs have seen over 2.6 million college graduates and more than one million secondary vocational-school graduates. The non-degree graduates of continuing education and in-service training are over 35 million. In addition, tens of thousands of farmers in different parts of China have received training through various practical agriculture-related courses provided by RTVUs. At the time of writing, CCRTVU's course programmes are transmitted by both CCTV (China Central TV) and CETV (China Education TV), amounting to 9,000 teaching hours per year. CETV has three channels transmitting the courses via satellite. In terms of system communication, CCRTVU has been connected to PRTVUs via computer networks, which allow for some network-based teaching and management.

For a long time, many conventional universities in China have set up within their own institutions the distance education colleges or schools or departments, which offer off-campus programmes to distance learners (mostly working adults). In 1997, Hunan University, through cooperating with Hunan Telecom, established China's first on-line university. In 1998, Tsinghua University launched its on-line Master's programmes. In July 2000, the Ministry of Education released the *Provisional administration methods for educational websites and on-line schools*, exhibiting the jurisdiction of the Ministry over educational websites and web-based schools. Soon after that, the Ministry granted online learning licenses to 31 universities in China, including CCRTVU in the pioneering list. Then the Ministry promulgated s*everal comments on supporting some universities and colleges to set up Internet education schools and pioneer distance learning*. In light of the policies in the document, the 31 pioneering universities enjoy substantial autonomy in their online learning initiatives. They can set the admission criteria and determine the admission quota by themselves. They can offer programmes not included in the subject catalogues produced by the Ministry of Education, and they can award degrees or certificates recognised by the government (CERNET, 2001d).

According to CERNET's figure (2001d), up to now the 31 pioneers have offered places to nearly 190,000 registrants, most of whom register for degree programmes. At the same time, a tide of educational websites has been witnessed. Many global players have

been involved in educating Chinese living in the remote areas. Some of them have even set up their own Internet education platforms in China.

The latest statistics from the Ministry of Education (MOE, 2001) show that a total of 45 universities have been granted online learning licenses by the Ministry of Education. The total number of students enrolled for various programmes at the 45 universities will reach 400,000 in September 2001 (Fu, 2001). In addition, according to the Xinhua News Agency, China has established the largest transmission network for education television programmes in the world. There are more than 100 education television channels operating at both national and regional levels across China. In 1999, over 100 million Chinese received training or further education through education television channels (Xinhua News Agency, 1999).

According to the Ministry of Education, it is expected that by 2010 a multi-level, multi-form and multi-functional distance education network with Chinese characteristics will have been established in China (Wei, 1999).

Distance Teacher Education

Like most of the distance-education programmes, distance teacher-education programmes in China are essentially concerned with adult education. The programmes are primarily targeted at working adults (in this case, teachers already working in schools) and they focus on in-service teacher education. The institutions engaged in distance teacher-education programmes are normally of two types. The first type refers to those specialised distance teacher-training schools like CTVTC at CCRTVU. The second type involves those teacher-education or distance-education colleges/schools/ departments/ sections in conventional universities. Despite their different names, the teacher-education or distance-education colleges/schools/departments/sections in conventional universities offer teacher-education programmes via distance learning to in-service school teachers.

Distance learning has played an important role in teacher education for primary and secondary schools and will continue to do so in future (Yang, 1998 and 2000). China is facing great challenges and also has great potential in the development of distance education for primary- and secondary-school teachers. Three reasons stand in favour of the argument. First, there are still a large number of unqualified primary- and secondary-school teachers in China, mostly working in rural areas. (In 1998, the number was 1,056,000.) Therefore the demand for continuing education to obtain the necessary teaching qualifications is high.

Second, according to the 'Gardeners' promotion project across the centuries', the demand from currently qualified teachers at primary and secondary schools for continuing education is high too. The project proposes that around the year 2010, in areas with the necessary conditions, full-time teachers in primary schools should have had at least two years' post-secondary education and possess a college diploma. Teachers in junior secondary schools should have completed first degree-level undergraduate education. In economically developed areas, a certain percentage of full-time teachers and principals of senior secondary schools should have a Master's degree (MOE, 1999). The project in fact indicates that the current qualifications of primary- and secondary-school teachers (cf. Table 2.17) will have to be upgraded to a higher level around the year 2010.

Third, in terms of non-degree in-service teacher training, the 'Gardeners' promotion project across the centuries' states that within three years starting from 1998, job-related training should be provided through various channels to principals and full-time teachers at all kindergartens, primary schools and secondary schools in China. The objective is to provide no fewer than 240 hours of training to each of the kindergarten, primary- and secondary-school teachers in most regions in China over the three years. Teachers in poor areas should receive at least one structured training session, with no fewer than 40 contact hours. Among the various training programmes, it is stipulated that computer literacy is compulsory for all teacher trainees (MOE, 1999; Yang, 2000).

So, it is obvious that to fulfil the ambitious targets described above is no easy job for China, and will have to involve both specialised and non-specialised teacher-training institutions, conventional-education institutions and distance-education institutions. In other words, without distance learning and the support of distance-education institutions, the intended aims of the project can hardly be achieved by the conventional campus-based education institutions alone, whether they are specialised or non-specialised teacher-training institutions, or both.

Take the above-mentioned non-degree in-service teacher-training targets for example. According to 1999 figures, there were a total of 10,574,000 full-time kindergarten, primary- and secondary-school teachers in China (cf. Table 2.6). If each of them is offered one job-related training session, the government has to provide training to 3,524,667 teachers annually. On the other hand, the capacity for training teachers in the existing specialised teacher-training institutions, which are the main bodies of teacher education in China, is quite limited. In 1998, there were 229 normal universities and colleges with an enrolment of 693,600 students, 875 secondary teacher-training schools with an enrolment of 921,100 students, 190 educational colleges with an enrolment of 212,000 students, and 2,087 in-service teacher-training schools with an enrolment of 371,000 students (cf. Table 2.17). Even if all these specialised teacher-training institutes collaborate and concentrate on providing in-service teacher training (theoretically, this can provide training to more than two million teachers at one time), it is still in practice an arduous task and it will take them about five years to reach the targets.

In fact, the Ministry of Education fully understands the difficulty in achieving these targets. In order to help achieve the project's aims, the Ministry of Education has initiated a series of training programmes targeted at different trainee groups. The major programmes include:

- Qualification make-up programme for primary- and secondary-school teachers
- Qualification upgrading programme for primary- and secondary-school teachers
- Training programme for primary- and secondary-school headteachers
- Training programme for primary- and secondary-school backbone teachers
- Computer literacy training programme for primary- and secondary-school teachers
- Support programme for teachers in poor areas.

In these teacher-training programmes, the Ministry of Education strongly advocates the use of open and distance learning, in combination with traditional face-to-face teaching and learning practice. Moreover, in order to promote the extensive use of open and distance learning, the Ministry of Education has set up the 'Continuing education project for primary- and secondary-school teachers'. The Ministry expects that by 2002,

with the support of information and communications technology, an open, continuing teacher-education network could be set up in China with distance education as its core component (Yang, 2000).

Purpose, Level and Curriculum of China Television Teachers College (CTVTC)

China Television Teachers College (CTVTC) was formally set up in 1987, but the preparation work started in 1986. It had long been an independent specialised distance teacher-training school, targeting in-service teachers working in primary and secondary schools, before it was incorporated into China Central Radio and Television University (CCRTVU) in 1994. Since 1994, CTVTC has become one of the academic departments of CCRTVU. As its name indicates, CTVTC conducts teacher training mainly via satellite television (CTVTC Brochure, 2000).

CTVTC's programmes and courses involve both degree education (qualification make-up education and qualification upgrading education) and non-degree job-related training. According to the CTVTC Brochure 2000, the main responsibilities and obligations of CTVTC are:

- providing degree education and continuing education for in-service primary and secondary school teachers
- providing degree education and continuing education for in-service primary and secondary school principals and other administrative staff
- running three TV programmes – 'Friends of primary-school teachers', 'Friends of secondary-school teachers' and 'Primary and secondary-school principals' – on Channel 3 of China Education Television (CETV-3).

According to the CTVTC Brochure 2000 and Yang (1998 and 2000), CTVTC has offered the following teacher-training programmes and courses since 1986.

In October 1986, CTVTC started delivering secondary-level teacher-training courses. The courses were targeted at in-service primary-school teachers without qualified certificates. Since 1986, a total of 16 secondary-level qualification make-up courses have been offered, which include Chinese, mathematics, basic natural science, geography, education, psychology, fine arts, music, physical education, and teaching methodologies for different subjects. Up to 1999, 717,300 in-service primary-school teachers successfully completed the courses and were awarded certificates in secondary teacher-education, which qualify them for teaching at primary schools.

From September 1987 onwards, CTVTC began to offer programmes leading to a college-level higher diploma. The target learners were in-service secondary-school teachers (mostly junior secondary-school teachers) without certificates. Since then, 12 subject programmes or specialities have been offered: mathematics, physics, chemistry, biology, English, history, geography, political studies, Chinese linguistics and literature, fine arts, music and physical education. Up to 1999, there were 552,000 graduates.

Apart from the above courses for unqualified teachers at primary and secondary schools, on-the-job training was provided to serving primary- and secondary-school principals from November 1989 onwards. Up to 1999, 15 training courses and various seminars on

school management and administration were offered, and about one million primary- and secondary-school principals were trained.

From January 1991 onwards, continuing education television programmes were also made available to qualified primary- and secondary-school teachers for further education. Each year, about two million in-service teachers watch the programmes.

In March 1995, Channel 3 of China Education TV (CETV-3), which is a special channel for basic education in China, started three new teacher-training programmes – 'Friends of primary-school teachers', 'Friends of secondary-school teachers' and 'Primary and secondary-school principals'. The three programmes aimed to provide continuing education to principals and teachers at primary and secondary schools nationwide. CTVTC was given permission by the Ministry of Education to run the three programmes. Since then, 750 hours of continuing education programmes have been provided by CTVTC each year.

In order to upgrade the qualifications of primary-school teachers from a certificate in secondary teacher education to a college higher diploma, in September 1997 CTVTC began to take part in a trial programme called 'Open-entrance programme', which was initiated by CCRTVU in September 1995. Under the new programme, students are exempted from entrance examinations and are allowed eight years to complete their studies. Once they obtain all the required credits in a certain speciality, they are awarded a college higher diploma. The open entrance trial programme was mainly intended for candidates from rural areas, grass-root areas and remote ethnic minority areas. Prior to the open-entrance programme, applicants for a college higher diploma at China RTVUs had to pass the National Entrance Examinations for General or Adult Higher Education Institutes, and they were normally given two years (full-time) or three years (part-time) to complete their studies. If they failed their studies, they had to re-register. With the introduction of the open-entrance programme, candidates have easier access and more flexibility in their studies (Ding & Niu, 1996). In September 1997, CTVTC offered an open-entrance primary teacher-education programme. The target learners were those qualified primary-school teachers who had already obtained certificates in secondary teacher education, but wanted to further upgrade their qualifications to a college higher diploma. Up to 1999, there were 85,000 open-entrance students enrolled in this programme (ICEM of CCRTVU, 2000).

In September 1999, CCRTVU launched a new programme – 'Pilot programme of open education'. The programme involved both BA degree education and college diploma education. This was the first time CCRTVU obtained the permission of the Ministry of Education to run BA degree programmes since it was founded in 1979. The content of the open-education programme was basically the same as the open-entrance programme. Candidates were exempted from entrance examinations. They were given eight years to complete their studies with a credit-based system. When a student successfully completed all of the courses for a certain speciality and earned all of the required credits within eight years, s/he would be awarded a BA degree or a college higher diploma.

There are two major differences between the open-education programme and the open-entrance programme. First, the open-education programme involved both BA-level degree education and college-level diploma education, whereas the open-entrance programme involved college-level diploma education only. Second, in the open-education programme, CCRTVU produced the examination papers for both of its BA degree

programmes and college diploma programmes. In contrast, under the open-entrance programme, the Self-Taught Examination Office (an independent examination body directly under the leadership of the Ministry of Education) set the examination papers for the college diploma programmes offered by CCRTVU. In other words, CCRTVU took charge of the pedagogical aspects of the open-entrance programme while the Self-Taught Examination Office made the final decision regarding assessment.

In September 1999, CTVTC joined the first batch of academic departments at CCRTVU to take part in the 'Pilot programme of open education'. CTVTC offered an educational management programme leading to a college higher diploma, but it was not involved in any BA degree programmes. The target learners of the educational management programme were principals and other administrative staff at primary schools in China. The purpose was to help them upgrade their qualifications from certificates in secondary teacher-education to college higher diplomas. According CCRTVU internal statistics, there had been 29,000 students registered for this programme by April 2001.

Organisational Model

The purpose of establishing CTVTC was to make use of satellite television provided by the central government to quickly help the large number of unqualified teachers at primary and junior secondary schools in China to obtain their qualifications – certificates in secondary teacher education for primary schools and college higher diplomas for junior secondary schools. Meanwhile, it was expected that continuing education could be promptly and extensively offered to the principals and teachers working at primary and secondary schools in China through satellite television.

Prior to 1994, when it was incorporated into China Central Radio and Television University, CTVTC had been an independent specialised distance teacher-training institution in China. It was directly under the leadership of the Ministry of Education (at that time, the State Education Commission). CTVTC was primarily in charge of the subject curricula, course syllabi and TV programmes for the programmes and courses it offered. The Teacher Education Department of the Ministry of Education hired professors and scholars from conventional universities to write the corresponding textbooks. Normally, the textbooks and the TV programmes were designed to complement each other. The organisation and coordination of the teaching and learning activities were the responsibility of the local educational authorities in China. The province/city/prefecture-level educational colleges and the county-level in-service teacher-training schools across China took specific responsibilities for enrolling students and providing learning support. Course assessment was usually prepared and administered by the province-level educational authorities in different parts of China. Each semester, CTVTC would send its staff members to monitor the assessment administration in different provinces. Sometimes CTVTC would choose a specific course, of national importance, for setting a unified examination paper to be administered throughout China.

Based on its major functions as described above, Ding (1999a) states that CTVTC was in fact acting as a course transmission centre from 1987-1993. CTVTC used satellite TV to deliver its teacher-training programmes and courses and it was supported by the multi-level educational colleges and in-service teacher-training schools all over China.

In 1994, as a result of the restructuring of the Ministry of Education and its affiliated organisations, CTVTC was merged into CCRTVU and has since become one of the academic departments of CCRTVU. However, CTVTC has been operating as a special academic department within CCRTVU that exclusively engages in distance teacher education.

Since CTVTC joined CCRTVU, it has been brought under the RTVU management system and has thus benefited from the strengths of the system. To be specific, as the academic management centre for distance teacher-education within the China RTVU system, CTVTC has to adhere to the same five unified academic policies that have applied to CCRTVU since 1979. CTVTC is in charge of the compulsory courses that cover no less than 60 per cent of the total credits of a subject programme or a speciality. For these compulsory courses, CTVTC has the power to introduce the unified course syllabi, materials, timetables, assessment methods and criteria. Local RTVUs of all levels in different parts of China become the learning-support centres of CTVTC. They are in charge of enrolling students and putting into practice the teacher-training plans set by CTVTC. They follow the compulsory courses with the same course materials and with the same teaching requirements stipulated by CTVTC.

In terms of course delivery, CTVTC continues to utilise satellite TV to transmit its programmes and courses. In addition, it has begun to make endeavours to produce learner-centred multi-media course packages, which may include printed texts, audio tapes, video cassettes, CAI (computer assisted instruction) courseware, and so on. A multi-media package has become a component of course development in recent years.

Costs and Effectiveness

During the research process of this study, the researchers found that it is very difficult to conduct an in-depth analysis on the issue of the cost-effectiveness of a particular education programme at Chinese RTVUs (including CTVTC). There were felt to be two major causes for this difficulty. First, it seems that the issue of costs is a sensitive topic. No official data are released regarding the total costs of a particular education programme at Chinese RTVUs (including CTVTC), not to mention the different cost elements within the programme and the percentage of those individual elements. Second, the effectiveness of a particular education programme seems to be hard to measure and thus hard to report, since many factors might be involved and different stakeholders might have different views. As a consequence, what has been obtained in this research study concerning the costs and effectiveness of the teacher-training programmes at CTVTC is generally a vague and incomplete picture. More in-depth research is needed in this area.

According to Yang (1998), the total public expenditure per student at China's RTVUs is approximately one-tenth of that on a student at conventional universities and colleges. On an annual basis, the ratio of expenditure per RTVU student to expenditure per conventional university student is one to three. Ding (1999b) adds that the annual cost per graduate at China's RTVUs is about one-third to two-fifths of that of the cost per graduate at conventional universities and colleges. The figure may be varied depending on different specialities: about 30 per cent for the humanities, 35 per cent for economics and 40 per cent for science and engineering.

As for the personal cost to students at China's RTVUs, the *RTVU Online* (2001) reports that the total tuition fees for a three-year diploma programme are RMB3,300-4,500, with the annual average being RMB1,100-1,500. The total tuition fees for a BA programme for students with a college diploma are RMB5,000-6,000, with an average of RMB330-400 for one course.

From 22 June to 20 July 2001, one of the researchers in this study paid a field trip to CCRTVU, Fujian PRTVU, Yunnan PRTVU and Xinjiang PRTVU. The researcher managed to have some informal talks with the leaders and the course tutors who were involved in the teacher education programmes at the universities. In response to the question of effectiveness of the distance teacher-training programmes available at the universities, much of what the interviewees said was basically the same as what is usually claimed in the university brochures or other official informative documents. That is, the examples of effectiveness normally draw on the number of students enrolled in a certain programme and the number of graduates completing the programme. In the interviews, the number of enrolled students and the number of graduates from various teacher-training programmes offered by CTVTC were quoted in a similar manner as evidence of programme effectiveness. However, what the interviewees emphasised in their talks was that a large number of primary- and secondary-school teachers in China who were working in rural and remote areas had indeed upgraded their qualifications and improved their teaching skills by taking the distance programmes offered by CTVTC through satellite TV. Otherwise they would not have the opportunities to receive further education, as they could not give up their teaching jobs to study. On the other hand, the teacher-training programmes offered by CTVTC were generally of top quality, because the TV presenters and the textbook writers were all renowned professors and scholars in teacher education in China.

General Comments and Recommendations

Now we are coming to the end of this project after months of hard work, we believe that this project has filled in some gaps in distance teacher-education research in China. Throughout the research process, we had the feeling that there is a lack of data in this area, which implies that more research needs to be conducted in the future.

One constraint of this project is that we only had four months to complete the study. With more time, we believe we could do better. Another constraint is that much of our time and efforts have been spent on those parts that are not directly concerned with the distance teacher-education programmes at CTVTC, although we feel that they are indispensable in a project like this.

We fully understand that UNESCO places great importance on costs and effectiveness issues, and are very interested in such issues ourselves. In our field trips to some local RTVUs in China, the interviewees expressed the same expectations. Unfortunately, due to the two reasons discussed in the section on costs and effectiveness and the two constraints described above, we have not done much in this regard. We suggest more in-depth and focused studies should be conducted in this area in the future.

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RASHID ADERINOYE

3   Nigeria: An Alternative Route to Primary-teacher Qualifications

Executive Summary

This chapter describes the National Certificate in Education (NCE) programme offered by the National Teachers Institute (NTI) in Nigeria. It provides an alternative but equivalent route to initial teaching qualifications for working primary teachers in a country very short of qualified teachers and where conventional college output cannot meet demand.

Background

The Federal Republic of Nigeria covers an area of 923,768 km^2 on the shores of the Gulf of Guinea, with Benin to the West, Niger to the North, Chad to the North East, and Cameroon to the East and South East. The estimated population (year 2000) is 121,300,000, with an annual growth rate of 2.9 per cent between 1992-98. Nigeria is the most populous African country with more than 250 ethnic groups. Population density (year 2000) averages 131 per km^2. Kano State remains the most populous state with 5.8 million inhabitants (6.5 per cent of the population) while the Federal Capital Territory is the least populous with 371,674 inhabitants. According to the National Office of Statistics, as cited by the Federal Ministry of Education, the 0-14 age group constitutes 45 per cent of the total population; 52 per cent of the population is in the 15-64 age group; and three per cent is 65 years and over. 49.96 per cent of the population is female and 50.04 per cent male (FME, 2001).

Table 3.1: **Nigeria: National Data**

	Primary	Secondary
Population (millions)	110.8	
Size ('000 km^2)	924	
GDP per capita (purchasing power parity US$)	853	
Human Development Index	0.455	
Educational data	*Primary*	*Secondary*
Teaching force Total '000	435,210[a]	152,596[a]
'000 female	201,905[a]	54,949[a]
Gross enrolment ratio		
All students	98	33
Female	87	30
Pupil-teacher ratio	37	–

(Source: UNDP, 2001; UNESCO, 2000; UNESCO, 2001; Note: population, size, GDP and HDI figures are for 1999; education figures are for 1996; a: 1994

The oil sector provides 41 per cent of Nigeria's GDP, 97 per cent of foreign exchange earnings, and about 80 per cent of budgetary revenues. The largely subsistence agricultural

sector has failed to keep up with the rapid population growth, such that the country, once a large net exporter of food, now imports food. Nigeria is classified by the World Bank as a low-income country. Its GNP per capita was US$ 300 (1998) with an annual average growth of –1.8 per cent. However, while the total national growth rate remains steady due to oil sales, real living standards have fallen sharply.

Administratively, Nigeria is made up of 36 states and the Federal Capital Territory (FCT) in Abuja. It has 774 local governments for the effective participation of the grassroots people in sustainable human and physical development. A large number of the urban centres are linked with roads, while the rural areas are yet to enjoy similar facilities. More than 65 per cent of Nigerians have access to radio and about 25 per cent to television.

The Nigerian Educational System

Since Nigeria's independence in 1960, it has recorded significant progress in the provision of education. From fewer than 3,000 primary schools in 1960, enrolling about 1.3 million pupils, there are now over 44,000 primary schools with an enrolment in excess of 20 million. The number of secondary schools and their enrolment rose went from 534 and 24,640 respectively in 1960 to 7,000 public and private secondary schools in 1999, with 3.4 million students. At tertiary level, there has been similar growth. From one University College in 1960, there are now 175 tertiary-level institutions made up of 40 universities, 31 polytechnics, 40 technical colleges, and 64 colleges of education with a total student population of over 800,000. Since population growth rate has outpaced the education sector's growth rate, such expansion in the educational sector has failed to significantly increase the literacy rate, which stands at 57.6 per cent (FME, 2000).

Responsibility for the management of education is shared by the federal, state and local governments and the communities, although the Federal Government has played an increasingly important role since 1970. The Federal Ministry of Education (FME) is responsible for formulating educational policies and national development plans, coordinating national educational practices, exercising quality control, and stipulating as well as maintaining standards among the states. The states are responsible for implementing policies formulated by the FME and managing all aspects of education.

The FME owns and funds 25 universities, 17 polytechnics, 19 colleges of education, 66 secondary schools and technical colleges (secondary vocational schools) which are located in all the states of the country. The remaining tertiary institutions are owned and funded by state governments, communities and private organisations. In 1995/96, of the total student enrolment in higher education, 59.3 per cent were in universities and equivalent institutions and 40.7 per cent in polytechnics and other technical institutions. About seven per cent of the national budget goes into the educational sector.

The role of education in the economic, social, and political development of any country has never been in doubt. Any nation, therefore, has a duty to give her citizens a good and worthwhile education. Every country of the world tries from time to time to renovate its educational systems, and Nigeria is no exception. The 1969 National Curriculum Conference, together with the National Seminar on Nigerian Education in 1973, set out the structure, content and direction of formal education in Nigeria. This was after several decades of a virtually irrelevant, uncoordinated and imposed colonial educational system. The 1969 Conference thus represents a landmark in the evolution of education in Nigeria.

The current national policy on education in Nigeria adopted in 1977 and reviewed in 1981 is based on the educational formula 6-3-3-4, which represents the number of years a child is expected to spend at various levels of education: six years in the primary school, followed by three years at junior secondary, another three years at senior secondary and four years at tertiary level. The 6-3-3-4 system is a radical departure from the former British implanted educational system in Nigeria. A striking feature of colonial education in Nigeria, according to Osokoya (1989), is that it was essentially guided by imperial utilitarian considerations. Thus in the view of its critics, the former system was largely irrelevant to the political, economic, social and cultural needs of the Nigerian people. For this reason, they argued, such a system could not meet the national needs for self-reliance and sustainable development in an essentially agricultural state such as Nigeria.

Thus, a new system whose goals include, among others, the acquisition of appropriate and relevant skills, appreciation of the dignity of labour, eradication of illiteracy, redressing the problem of manpower shortage and the promotion of scientific and technological advancement was devised. In short, the main goal of current educational policy in Nigeria is to give the nation a sense of direction by establishing a system that will embody the nation's aspirations. This structure reflects changes to the educational system in operation in the1970s before the NTI was established. The changes include the abolition of the grade-three teacher-training scheme, the replacement of the five-year secondary form with the six-year secondary form As already indicated, the first three years of secondary education is the last part of the nine-year basic-education programme, while the second three years is known as the senior secondary, after which a student can proceed to the last '4' of the 6.3.3.4, which could be in a university or other tertiary institution.

Teacher Education

The minimum qualification required for a primary-school teacher is the Grade Two Teacher's Certificate (TCII). As a matter of policy, the Nigerian government reviewed the minimum requirement upwards to the National Certificate in Education. However, because of the inadequate number of teachers in the country, the implementation of this policy remained suspended. The minimum qualification for a teacher is any of the following: Junior Secondary School (JSSIII), Senior Secondary School Certificate (SSCE), or Arabic School Certificate and the City and Guild certificate. Possession of any of these certificates serves as the entry requirement to any of the teacher-training programmes. Candidates possessing these certificates may proceed to the NCE, or to university to pursue an academic programme in pure sciences, social sciences, arts or education (BSc, BEd, BA), or to technical studies like the Higher National Diploma (HND). A graduate from of any of these courses, except the NCE, who is interested in teaching as a profession has to take a Postgraduate Diploma in Education (PGDE).

Knowles (1980) declared that education provides learners with the opportunity to acquire five basic things – to know, to do, to learn, to be, and to live together. It is therefore essential for prospective teachers to acquire the teaching skills and knowledge that will enable them to function effectively in class, always conscious of what the pupils should be acquiring. This therefore makes teacher training a duty of the government, particularly when faced with an acute shortage of teachers at the start of a mass-education programme of the magnitude of Universal Primary Education (UPE).

In 1976, the Federal Government, realising the enormity of the problem of teacher shortages, accepted the recommendation of UNESCO experts that distance education should be adopted for the mass training of teachers that would be needed for the successful execution of its UPE scheme launched in that year.

Figure 3.1: **Structure of the Nigerian Education System**

Age limit				
	Colleges of Education A. SSC/TCII B. Entrance exams C. Cont. assessment & exam D. Coll. of Education E. NCE	**Universities** A. SSC/ND B. Matric. exam C. Cont. assess. & exam D. Universities E. Bachelor's degree	**Professionals Institutions** A. SSC/TCII B. Depend on the institution C. Professional Cert. & Dip.	**Polytechnics** A. SSC/TCII B. Entrance exam C. Cont. assess. & exams D. ND/HND
18-22 years				
15-17 years	**Teachers' colleges** A. SSC B. Entrance exam C. Cont. assessment & national exam D. NTI & Min. of Educ. E. TCII	**Senior-secondary schools** A. Junior School Cert (JSC) B. Based on JSC result C. Cont. assess. & national exams D. WASC E. Senior School Cert. (SSC)	**Technical colleges** A. A-B based on Jnr Schl Cert. (JSC) B. Cont. assess. and national exam C. Appropriate Federal Ministry Departmental (WAEC) & (NABTEB) etc. D. Trade test/craftmanship Cert. (WAEC Technical), national technical examination	

Junior-secondary schools
A. Must complete Primary School Certificate (PSC)
B. Direct transmission from primary
C. Continuous assessment and state examinations
D. Ministries of Education
E. Junior School Certificate (JSC)

12-14 years

Primary school
6 years

6-11 years

Pre-primary schools
A - Age 0-5 years
B-D. Not Applicable

0-5 years

Source: FME, 2000; Key to Figure 3.1: Admission requirements: A: Mode of entry, B: Mode of assessment, C: Examining body, D: Certificate to be obtained.

The Federal Ministry of Education, with the assistance of consultants funded by UNESCO and UNDP, set out the following conditions as essential for the successful implementation of UPE:

- designing a network of teacher-training and other relevant teacher-education support services

- providing specialists in certain areas of need – for example, course writing – as well as technical assistance in the area of teacher support services, visual techniques, printing and so on

- arranging for a trained component of Nigerian staff to be recruited

- assisting in planning the full implementation of the programme

- providing additional external aid in various forms (Perraton, 1993).

In its report, this consultant mission suggested the need to expand existing teacher-training institutions and provide in-service education to upgrade the large number of unqualified teachers in the nation's primary schools. To accomplish these aims, the mission recommended that a non-formal approach be adopted. In accepting this recommendation, the Federal Government, in recognition of the unprecedented population explosion in primary schools resulting from the implementation of UPE, on 10 April 1978 promulgated Decree No. 7 establishing the NTI, with the main objective of upgrading and improving the quality of teachers using distance learning. This was to be based on the most modern techniques of distance education available – print and electronic media (radio and television), audiotapes and films, supplemented by a face-to-face component.

Level, Purpose and Curriculum

In spite of the efforts of many states to produce enough teachers to fulfil the requirements of the NPE, Nigeria is yet to solve the problem of the shortage of qualified teachers. The NTI is a part of a national approach to addressing the deficiency while at the same time introducing some uniform standards in teacher training.

Objectives of the NTI

In the initial concept paper on the NTI prepared by the FME in 1974, the specific objectives include:

- to train and upgrade all unqualified TCII teachers to NCE level

- to provide the basic background for those who may later wish to pursue their studies at higher level

- to help produce the teachers required for the successful implementation of the National Policy on Education.

Some other responsibilities of the NTI are:

- organising and providing programmes for the training, developing, upgrading and certification of teachers

- formulating policies and initiating programmes at all levels of education designed to improve, by way of research, the quality and content of education in Nigeria

- assessing, from time to time, the training programme offered by institutions controlled by or associated with the NTI with a view to ascertaining the professional competence of those institutions
- conducting postgraduate courses and examinations in education for graduates.

Target Audience and Entrance Requirements

Over the years, the need to upgrade TCII teachers to NCE level has become imperative because of government policy that stipulates that teachers who fail to upgrade will be excluded from the school system. Again, the government's intention to implement its policy of making NCE the minimum teaching qualification requires a more flexible process of upgrading serving TCII teachers to NCE level.

It is therefore not surprising to find that all the NTI's NCE candidates are serving teachers, both male and female. (In the 1997-2000 cycle, 44.5 per cent were men and 55.5 per cent women.) The minimum academic requirements for entry to the programme include the following:

- TCII/National Teachers' Certificate with merit or credit in three subjects, including the teaching subject the candidate intends to study (or its equivalent)
- Associateship Certificate in Education (ACE) or its equivalent
- TCII, with at least five years' post-qualification teaching experience, with or without the credits/merits indicated above
- successful completion of the NTI's Pre-NCE programme.

In addition, candidates offering any of the science subjects as a teaching subject must possess at least a pass in Mathematics, while those offering English as a teaching subject must possess O' Level English language or literature or a TCII credit in English Language or a TCII pass in English Language and a credit in English Literature.

Curriculum

Fafunwa (1967) itemised curriculum into three major headings: general education, specialised programmes and professional training. The NTI's curriculum covers all three categories as it includes school subjects, pedagogical needs and its specialised process of training teachers through the distance education. English, the official language in Nigeria, is the language of instruction in the Institute.

The fundamental programmes of the NTI are:

- the Teachers Grade II Certificate by Distance Learning System, known as TCII by DLS. Initiated in 1984, the programme is designed for upgrading all school teachers to TCII level by distance learning. The NCI took over the setting of the TCII examinations and issuing of certificates from the West African Examination Council in 1982.
- the Nigerian Certificate in Education by Distance Learning System, known as NCE by DLS. This programme is aimed at upgrading all TCII teachers in the primary-school system to NCE level. The programme, which began in 1990 with a

student population of 29,000, in the six years from 1990-1999 produced about 48,204 NCE graduate teachers.

- the Pivotal Teacher Training Programme. This is a special programme to complement the successful implementation of the Universal Basic Education (UBE) programme as a result of the acute shortage of teachers. It is a temporary measure started in 2000 and is likely to terminate soon. Those trained under the scheme will be classified as neither TCII nor NCE. They will be awarded a special certificate.

UBE as a concept is expressed in the *World declaration on education for all* (WCEFA, 1990). In the Nigerian context, the objectives of UBE include, among others:

- the provision of free basic education for every Nigerian child of school age
- drastically reducing dropout from the formal school system
- catering for young people who, for one reason or another, have had to interrupt their schooling
- ensuring the acquisition of the appropriate levels of literacy, numeracy, manipulative, communicative and life skills, as well as the ethical, moral, and civil values needed for laying a solid foundation for life-long learning (Mohammed, 2000). This was also reiterated in the Dakar Framework for Action, where it was articulated in terms of inclusive education.

A huge programme like this poses enormous challenges to its operators. Among the more obvious challenges are issues relating to the number, quality, and variety of teachers required for the successful execution of the programme. Facing these challenges appropriately is, in fact, the major task of distance-education operators. NTI's response to this challenge is the Pivotal Teacher Training programme (PTTP), which has enrolled more than 40,000 trainees in two years (Mohammed, 2001).

It is in appreciation of the importance of the NTI's activities to educational development in Nigeria that mention will continue to be made of all its principal programmes. For the purpose of this study, however, only the NCE programme will be comprehensively examined.

Teachers' Grade II Certificate

Responsibility for the design of the TCII DLS teacher-training programme, as well as for primary and secondary education, lies with the FME. However, the FME commissioned the NTI to review and develop curriculum guidelines for teachers' colleges in 25 subject areas, including those subjects examined by the State Ministries of Education. The purpose was to standardise what is taught in the teachers' colleges nationwide. This means in practical terms that all TCII programmes use the same curriculum as the NTI's TCII programme.

A candidate for the TCII must pass the following compulsory courses set by the NTI: English Language (essay, lexis and structure, oral English); Mathematics; and Education (principles and practice, methods of teaching English, methods of teaching mathematics). In addition, a candidate must pass either Social Studies or Integrated Science and other electives set by the ministries of education or the NTI up to a minimum of seven subjects, including practical teaching. The three compulsory subjects, together with Integrated

Science and Social Studies, are examined by the NTI, while other subjects are examined by the states.

Nigerian Certificate in Education

In response to several requests from some states asking for the NTI to run an NCE programme, the Institute carried out a nationwide feasibility survey. The results of the survey showed that 89 per cent of the respondents were willing to undertake the course. The NTI's NCE programme provides in-service training for teachers, eliminating the problems that would be caused by teachers having to leave their schools for further training.

The NCE curriculum comprises:

1.   compulsory courses in education:
    - Principles of Education (36 modules)
    - Primary Education Studies (50 modules): a course covering the full primary curriculum of languages, arts, mathematics, science, social studies, physical and health education, cultural and creative arts)
    - Practical teaching of four weeks per cycle (year)
    - Use of English and Communication (four modules)

2.   one course drawn from the following teaching subject options: English, Mathematics, Integrated Science, Social Studies, Physical and Health Education, Christian Religious Studies, Islamic Studies, Cultural and Creative Arts. Each of these courses has 36 modules, and each module comprises ten units.

For candidates not offering primary education studies as a major, the following course combinations are available

1. English/Islamic Religious Studies
2. English/Christian Religious Studies
3. Cultural and Creative Arts
4. English/Social Studies
5. Integrated Science/Mathematics
6. Social Studies/Islamic Religious Studies
7. Social Studies/Christian Religious Studies
8. Physical and Health Education (double major)
9. English (double major)
10. Integrated Science (double major)
11. Social Studies (double major)

The programme is organised into four cycles, corresponding to four years, with teaching divided into three terms of 13 weeks. Students are expected to spend four of the 13 weeks of holiday on practical teaching, four weeks on revision tutorials and four weeks on examinations.

Organisational Model

The NTI is a parastatal organisation funded directly by the FME. In Nigeria, responsibility for the provision of primary and secondary education rests with the various state Ministries of Education, which are responsible for recruiting teachers in the public sector. Given this situation, the NTI is aware of the need to ensure active consultation with the states' educational authorities. To this end, each state Ministry has a representative on the NTI Council and all of them are involved in the organisation and management of the Institute. The NTI has an office in each state capital, and the coordinators who staff these offices are those recommended by the state Ministries of Education. The NTI Council is the Institute's supreme governing body, and the NTI Director reports to it. The Minister of Education oversees the Institute.

To effectively carry out its functions, NTI is organised into six major departments and several divisions and units:

- the Directorate – comprising the Computer, Information and Publications, Internal Audit Units, and the Estate and Printing Divisions
- the Administration and Personnel Department, which provides administrative support for the various operations of the Institute
- the Professional and Field Operations Department – responsible for the development and management of the Institute's distance learning services. This department is, in turn, comprised of three divisions:
  - the Professional Division, which develops all NTI course materials
  - the Students' Affairs Division, which manages the distance learning system in the field and study centres,
  - the In-Service Education Division, which provides short-time in-service training for teachers through workshops, seminars and conferences
- the Examinations Department, responsible for setting, conducting, and marking all examinations handled by the Institute. The department comprises two divisions:
  - Test Development
  - Test Administration, made up of two units – Security Printing, and Recording and Statistics
- the Planning, Research and Statistics Department, which is concerned with planning, development, monitoring and evaluating the Institute's programmes. The department consists of three divisions:
  - Programme Schedules
  - Research and Evaluation
  - Statistics and Records
- The Finance and Supply Department – responsible for managing the Institute's finances and property. The department is composed of three divisions:
  - Administration and Management Information
  - Budget, Costing
  - Stores.

Figure 3.2: NTI Organisational Structure (1990)
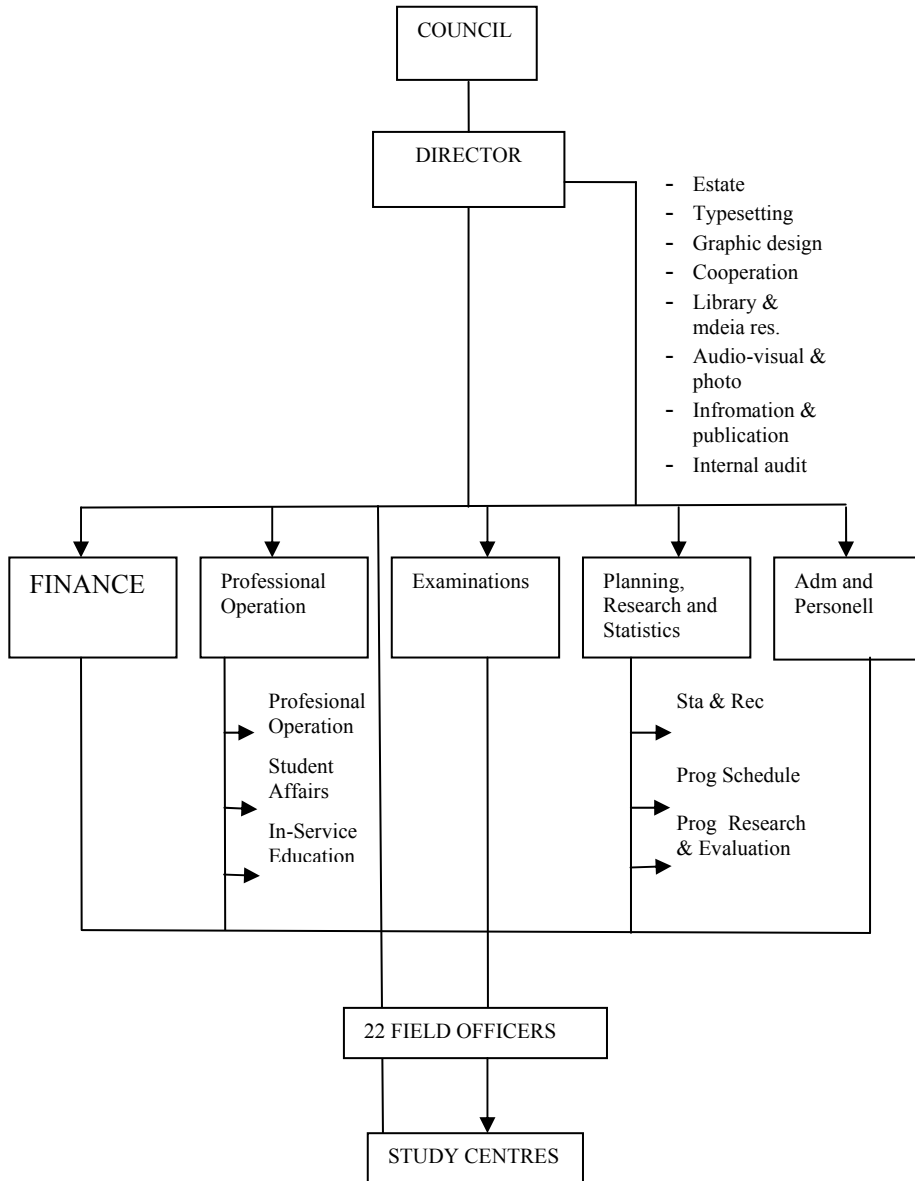
Source: NTI Planning Research and Statistics Services (2000)

Figure 3.3: NTI Organigram (Effective May 2001)

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┌─────────────────────────────┐
│      Governing Council       │
└─────────────────────────────┘
              │
┌─────────────────────────────┐
│ Director/Chief Executive Officer │
└─────────────────────────────┘
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Assist. Director Special Projects	Audit

- International cooperation
- Special projects
- Security
- Liasion
- Anti-corruption
- Transport
- PRO/protocol

Directorate of Academic Services	Directorate of Academic Support Services	Directorate of Field Operations & Student Services	Directorate of Finance Support Supplies

-Programme design & development
-Examinations
-In-service

-   Library services
-   ICT
-   Audio

-   Zonal offices
-   State

-Finance
-Estate (W&M)
-Institute's vent
  -Farms
  -Press
  -NTI Books Ltd
  -Confernce centre

Registrar/Directorate of Administration

-   General administration
-   Personell
-   Council affairs
-   Legal

Source: NTI Planning, Research and Statistics Section

Organisational Restructuring

The NTI structure outlined above has been in operation since 1985 and remained so until the recent re-organisation, the result of various studies conducted on the NTI, which becomes effective from May 2001. In the new structure, while the various sections and units retain their functions, they now operate under new directorates as follows:

- Academic Services
- Academic Support Services
- Field Operations and Student Services
- Finance and Supplies
- Administration
- Directorate and Office of the Chief Executive.

The distance-learning system is essentially handled by the Professional and Field Operations Department, while the Planning, Research and Statistics Department deals with monitoring and evaluation. The Examinations Department organises the TCII and NCE examinations and other such programmes falling under the NTI's jurisdiction. The Finance Department and the Administration and Personnel Department support the Institute's distance-learning and other programmes. Delivery is organised through the field centres and their dependent study centres.

The field centres serve as the administrative arm of the NTI at state level. Each field centre is headed by a coordinator, who is appointed on the recommendation of the relevant state's Ministry of Education. Below the field centres are the study centres, each headed by a supervisor. The study centres are the main source of tutorial and student support services. The director is the Chief Executive Officer of the NTI.

Communication System

Figure 3.4:
NTI Communication Structure
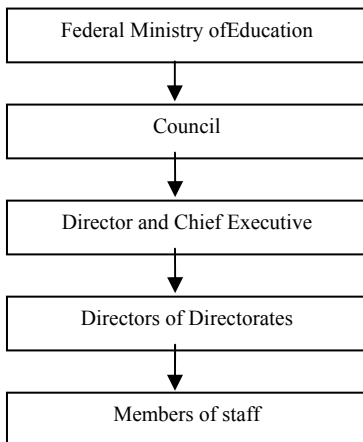
Figure 3.5:
Headquarters Communication Structure

NTI Communication Structure	Headquarters Communication Structure
Federal Ministry ofEducation	Headquarters
↓	↓
Council	Coordinators of field centre (states)
↓	↓
Director and Chief Executive	Supervisors of study centres
↓	↓
Directors of Directorates	Course tutors
↓	↓
Members of staff	Students
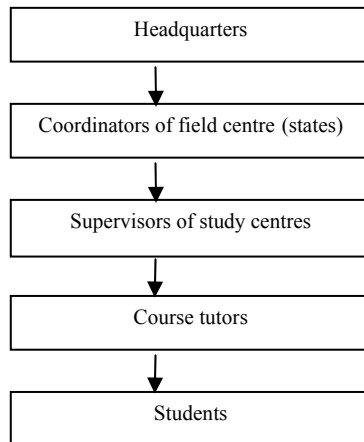
The NTI's channels of communication operate both top-down and bottom-up. Policy is communicated from the top down to grassroots level, while feedback on the relevance and practicability of policy passes from the field staff to the top level of the Institute. In

fact, the learners influence the final output of the Institute. Clear evidence of this can be seen in the modifications that have taken place in the restructuring of the Institute and review of the course materials. For the first time an academic has been made the Chairman of the Board, which is a major departure from previous policy where leadership was based on location rather than merit.

Geographical Coverage of NTI Activities

The NTI has its headquarters in Kaduna, with state offices or coordinating offices in all the 36 states of Nigeria including Abuja, the Federal Capital. Each state office serves as the field centre and is managed by a coordinator. Each state, in turn, has several study centres spread around the local government areas. To date, the NTI has over 200 study centres for NCE by DLS in all parts of Nigeria. The state offices perform the following functions among others:

- registration and documentation of students
- sales and distribution of course materials
- identification and supervision of study centres.

The national coverage of the programme has made it acceptable to all. It remains the only teacher-training institution that admits and trains candidates from all over the country, and has the largest number of trainees.

International Network/Collaboration

The NTI for many years was the coordinating centre for the distance-education institutions in the West African sub-region as well as the Headquarters of the Network of Open and Distance Education in Nigeria. It served as the regional centre for the Commonwealth of Learning until Nigeria was suspended. It is hoped that the return of Nigeria to the Commonwealth of Learning and the appointment of a Nigerian Ambassador, Michael Omolewa, to its Board, will bring back the NTI's lost glory as its remains the only dedicated distance-education institution in Nigeria.

Presently, NTI course materials are used in some other West African countries. This was confirmed at the recently concluded sub-regional workshop on the development of course material for distance education, where participants from Ghana and the Gambia acknowledged the role played by the NTI in the West African sub-region.

The need to network/collaborate with advanced distance-education institutions worldwide calls for connection of the NTI to the Internet, which it currently lacks. Generally, efforts are being made to re-engineer the Directorate of Academic Services to enable the NTI to compete favourably with similar distance-education institutions in other parts of the world.

Implementation

The implementation of the NTI's NCE programme is described below.

Instructional Strategies

Tuition is through printed texts. Teaching materials are in the form of self-contained instructional materials, well-structured and properly sequenced to make reading orderly and systematic. Each student is provided with specially prepared course materials that are either bought at a study centre or state office. The students are expected to study for a minimum of

two hours a day – i.e. 14 hours a week and 2,192 hours for the whole course. There are a total of 126 modules to be covered, with an average study time of 15 hours per module.

Many distance students use textbooks developed and published by the Institute. These textbooks are useful for the distance students as they contain a reasonable number of revision exercises. Though the prices are reasonable, some learners cannot afford to buy them.

There are about 220 study centres for the NCE programme, and contact sessions are designed for the weekends and school vacations. Course tutors and others appointed to teach on a part-time basis teach the students for a specified number of hours as agreed by the Institute. It is after these tutorials that revision exercises, followed by examinations, are scheduled. Audio- and video-cassettes as well as telephone for effective communication are currently lacking in study centres.

Grading and Assessment Procedures

Courses are assigned weights called credit units. A lesson, or unit, is designed for at least 1.5 hours' study time. A module consists of 10 of inter-related units with a study time of 15 hours. This is the equivalent of one credit unit.

The NTI has adopted the grading system recommended by the NCCE. The Institute has a minimum pass mark of 40 per cent (equivalent to grade point average of one). The grade point average is the average weighted grade point in the course taken during the term. This is obtained by multiplying the grade point attained in each course by the number of credit units assigned to that course, and then summing these up and dividing the total number of credit units taken for the term. Cumulative grade point average (CGPA) is the up-to-date average of the grade points earned by the student. This shows the students' overall performance.

Assessment takes the form of continuous assessment and examinations. Continuous assessment consists of tests, assignments and practicals, and constitutes 40 per cent of the overall assessment, while examinations count for 60 per cent of the overall assessment. Both teaching practice and other examination scripts are forwarded to external examiners for moderation. This is another inbuilt mechanism to ensure quality and standard. Records show that the Institute has always adhered to this assessment process.

Teaching Practice and its Assessment

Teaching practice is conducted in schools where student teachers are exposed to real classroom situations, interacting with pupils and other members of the school community. Appointed supervisors from neighbouring higher institutions visit student teachers at school at least three times during each of the four-week periods of teaching practice which are carried out each year in the four-year programme. These supervisors, apart from being experienced educationalists, also undergo special training to enable them to perform their tasks effectively.

The aim of the teaching practice is to improve the academic knowledge and the teaching skills of the students so as to enable them to teach more effectively. To qualify for the teaching practice, students must have obtained a score of 60 per cent in the course work. The two areas on which the practical is based are the cognitive and psychomotor domains so as to assess student's performance on a given task.

In assessing the students' teaching practice, the following variables are evaluated to ascertain the extent of student's knowledge and understanding of the subject and how far he/she has been able to master how best to impart such knowledge to the learners:

- understanding of the subject matter
- ability to communicate effectively
- effective use of audio-visual aids
- appropriateness of the aids to the lesson
- appropriateness of the lesson guide
- effective use of the lesson guide
- ability to move from known to unknown
- degree of learner participation
- class control
- effectiveness of evaluation
- mode of dressing.

Students are given a score on a scale of one to five for each variable, the best performance of scoring five points while the least capable would score one. Average scores for each variable are added up to give the total score. This assessment is compulsory, and any student who fails or does not participate in the practical assessment will not pass the course, even if he/she has passed the written theory papers.

Evaluation

The Institute, apart from welcoming researchers to evaluate its systems and activities, has also commissioned researchers to critically assess it performance over the years. Such studies include that of Aderinoye (1992) on 'Retention and failure: The experience of the NTI, Kaduna'; 'The National Teachers' Training Institute, Nigeria' by Bako and Rumble (1993); and 'Employer's assessment of NTI-NCE (DLS) students'/graduate performance at work', by the Planning, Research and Statistics Department of the NTI (NTI, 2000) among many others. Also in the pipeline is the tracer study that will focus on current activities and achievement of the graduates of the NTI.

One significant impact of these evaluation studies on the NTI is that it has always made the management of the Institute focus on improving their performance and ensuring the NTI's their relevance to the teacher-training process in Nigeria and abroad.

Accreditation and Quality Control

The NCE programme was approved by the National Council on Education on the recommendation of the Joint Consultative Committee on Education. The curriculum is accredited by the National Commission for Colleges of Education (NCCE), giving the NTI the status of a tertiary institution. (The NCCE is the authority charged with the maintenance of standards among the 65 institutions producing NCE graduates.) The courses in the curriculum are only taught after the NCCE is satisfied that there are sufficient tutors of an acceptable standard available to teach them. The Commission also conducts visits to study centres to assess their capacity for revision activities and for the supervision of teaching practice. The 1997/98 accreditation report on NTI courses revealed full accreditation of its courses, except for Integrated Science, which failed to meet the requirements of the NCCE due to lack of qualified teachers (NCCE/AP/44/ V.1/35). Full accreditation normally lasts five years, after which the institution is subject to another assessment.

The Monitoring and Evaluation Units of the NTI, as well as the Federal Inspectorate of Education, work together to ensure that rules and regulations governing the teaching and learning process are strictly adhered to by the Institute and its study centres. Regular training for all the staff of the Institute is carried out to keep them abreast of innovative practices that will improve their performance.

Sustainability

At the inception of the NTI, the Institute's authorities, relying on government support and the infrastructure already put in place, were confident that the programme would be implemented with minimal cost, and certain structures were put in place to generate resources. These included the resource centre, the printing press and the field and study centres in each state. Although some revenue has been generated through these investments, they have, unfortunately, failed to bring in the required funds owing to the state of the national economy at the time. As a result, the Institute's initially well-equipped study centres all over the country are now in very bad shape, and essential student support services are not available.

However, studies conducted on the activities of the NTI have revealed why learners would continue to register for the various programmes conducted by the Institute. A boost to the enrolment of learners in the future is the declaration of the current decade as the 'decade of distance education'. This has also brought renewed vigour to the vision of establishing a Nigerian Open University, whose implementation the experience of the NTI would go along way in guiding.

In addition, the programme possesses some motivational factors that certain studies have confirmed. For example Aderinoye (1992) highlights the following:

- professional advancement – most learners prefer the NTI system as they see their participation in the programme as leading to greater competence and as a path to higher qualifications. While they are still earning a salary, as on-the-job learners, they also have the expectation of a professional certificate.

- external expectations – the issue of government policy in relation to quality of teachers to teach in the nations' primary schools and the need to compete with peers in society enhances teachers' attendance and subsequent completion

- cognitive interest – the need to acquire knowledge for its own sake was also an important factor in the Institute's ability to sustain its learners

- in terms of physical effects, the NTI's sustainability does not fully rest on the Federal Ministry of Education as much of its funds are internally generated as a government parastatal organisation.

Costs

While considering the cost analysis of the distance-learning programme of the NTI, there were initial difficulties in the generation of data. Eventually some light was shed on the exercise. The period between 1996 and 1999 finally served as the basis of a cost-effectiveness analysis. This was to enable comparison with the 1998-2000 period, for which information is also available for the Federal College of Education, Abeokuta.

It can be stated with a reasonable degree of accuracy that 66.7 per cent of drop-outs were recorded within their first year of study, while the remaining 33.3 per cent dropped

out in the second year. It is also necessary to assume that those finalists that could not qualify in 1999 had a grace of one academic session within which to qualify.

For the drop-outs, the expenditure from the beginning of the programme up to when they could not continue is termed sunk cost and could not be paid back by the drop-outs. Sunk costs are usually added as part of the expenditure on successful students of the programme, as this is the only of retrieving such costs. Cumulative total cost is calculated to determine the total expenditure on each graduate of the programme. Calculating the cumulative total cost for those that repeated for some years, we take into consideration the expenses incurred during the extra sessions the repeaters stayed on the programme.

Table 3.2: Costs per Student, 1996-1999 (US$)

Year	Number qualified	Expenditure per student	Sunk cost per student	Effective cost per student	Cumulative cost per student
1996/97	–	–	–	74.39	–
1997/1998	–	54.87	19.52	74.39	149.78
1998/1999	2,872	43.85	9.49	53.34	203.12
1999/2000	2,295	31.17	24.91	56.08	259.20

Source: Data provided by Accounts Department of NTI

Thus 2,872 graduates were produced at a unit cost of $ 203.12, and 2,295 were produced at the cost of US$259.20 per graduate. The average cost of producing a graduate is therefore US$ 228.03.

$$\frac{(203.12 \times 2,872) + (259.20 \times 2,295)}{5,167} = 228.03$$

Cost Comparison With a Conventional College: Federal College of Education (FCE), Abeokuta

The expenditure per student of the FCE, Abeokuta of $ 317.76, $ 469.10 and $ 529.55 for 1998, 1999 and 2000 respectively (figures from Accounts Office of FCE) can be taken as the actual expenditure per student for the given year. This is due to the fact that in most conventional schools drop-outs and repetition rates are very low or almost insignificant. Therefore total institutional expenditure (part of the private costs, i.e. tuition fees, are included in the institutional costs presented) of producing a graduate through the programme is $ 1,316.41. It can therefore be concluded that the NTI programme is more cost-effective than the conventional college.

Though the breakdown of expenditures is not available, it is most likely that they are mostly incurred in direct teaching in both institutions. However, it is noted that the conventional college has a tendency to spend more on human resource management (recruitment, maintenance and development, pensions and gratuities). This is because most, if not all, of its staff are permanent employees, whereas the NTI relies mostly on part-time academic staff with a few full-time non-teaching staff.

Outcomes

There were a number of constraints to the undertaking of this study. One of the major constraints is embedded in the inherent weaknesses of case studies as a research approach. Denscombe (1999) declares 'case studies are often perceived as producing 'soft' data.

The approach gets accused of lacking the degree of rigor expected of social science as focusing on processes rather than measurable end product as relying on qualitative data and interpretive methods rather than quantitative data and statistical procedures.' The lack of an existing in-depth study on the NCI, particularly on the NCE-DLS programme, constitutes another constraint. Past studies have mostly been on the TC-II DLS programme, and the recently-commissioned 'tagged' tracer study on the graduates of the Institute was still in progress. This latter study, if concluded, would have helped in producing a more robust result. The lack of a comprehensive audited financial report constitutes another major constraint, as the NCI's Accounts Department could only supply scanty information on its finances. The financial report on costs could not meet the needs of this study as it would have to be approved by the Governing Council before it could be released for public consumption.

Effectiveness

A number of key issues were identified in terms of the NCI's effectiveness**.** In spite of the weaknesses highlighted below, it should be noted that a great number of learners follow programmes that are designed to suit their needs, and that the flexi-learning programme gives learners the opportunity to learn at their own pace and in their own preferred style.

Enrolments and Retention

A study of the enrolment and retention of the NTI's NCE programme revealed the following data covering cycles 1994-97, 1995-98, 1996-99 and 1998-2000.

Table 3.3: NCE Enrolments and Retention, 1994-1997

Serial no.	State	Number enrolled Cycle 1	Completers	Total qualified	Pass rate (%)
1	Anambra/Enugu	639	628	533	84.9
2	Bauchi	200	36	12	8.08
3	Edo/Delta	453	449	312	69.5
4	Benue/Yogi	204	113	44	38.9
5	Borno/Yobe	80	80	21	26.3
6	Crossriver	140	109	62	56.9
7	Adamawa/Taraba	200	133	52	39.1
8	Imo/Abia	416	342	219	64.0
9	Kaduna	136	121	43	35.5
10	Kano/Jigawa	582	351	12	3.4
11	Kwara/Kogi	171	149	97	65.1
12	Lagos	1,071	991	734	74.1
13	Niger	9	7	1	14.3
14	Ogun	273	214	129	60.3
15	Ondo	451	451	274	60.8
16	Oyo/Osun	320	302	205	67.9
17	Plateau	97	71	19	26.8
18	River	80	45	37	82.2
19	Sokoto/Kebbi	848	427	40	9.4
20	FCT	25	25	2	8.0
21	Katsina	121	79	11	13.9
22	Akwa Ibom	608	582	437	75.1
	TOTAL	7,324	5,305	3,296	62.0

Table 3.4: NCE Enrolment and Retention, 1995-1998 Cycle

Serial no.	State	Number enrolled	Completers	Total qualified	Pass rate (%)
1	Anambra/Enugu	433	384	299	77.9
2	Bauchi	200	110	35	31.8
3	Edo/Delta	596	537	495	92.2
4	Benue/Kogi	109	90	45	50.0
5	Borno/Yobe	236	221	117	52.9
6	Crossriver	436	295	151	51.2
7	Adamawa/Taraba	111	96	57	59.4
8	Imo/Abia	600	555	486	87.6
9	Kaduna	205	195	113	57.9
10	Kano/Jigawa	712	264	42	15.9
11	Kwara/Kogi	189	118	97	82.4
12	Lagos	578	479	402	83.9
13	Niger	33	32	29	90.6
14	Ogun	75	72	70	97.2
15	Ondo	275	229	217	94.8
16	Oyo/Osun	212	294	167	81.9
17	Plateau	88	77	40	51.9
18	Rivers	261	135	99	73.3
19	Sokoto/Kebbi	712	399	68	17.0
20	FCT	41	40	008	20.0
21	Katsina	1064	419	213	50.8
22	Akwa Ibom	435	353	248	70.3
	TOTAL	7,581	5,304	3,498	66.0

Table 3.5: NCE enrolments and Retention, 1996-1999 Cycle

Serial no.	State	Number enrolled	Completers	Qualified	Pass rate (%)
1	Anambra/Enugu	436	386	330	85.5
2	Bauchi	360	162	43	26.5
3	Edo/Delta	706	552	483	87.5
4	Benue/Kogi	237	189	156	67.2
5	Borno/Yobe	127	103	61	59.2
6	Crossriver	399	186	111	59.7
7	Adamawa/Taraba	650	254	102	35.9
8	Imo/Abia	534	399	344	86.2
9	Kaduna	435	288	100	34.7
10	Kano/Jigawa	701	81	29	35.8
11	Kwara/Kogi	270	163	114	69.9
12	Lagos	659	540	428	78.3
13	Niger	544	507	174	34.3
14	Ogun	83	76	71	93.4
15	Ondo	286	234	196	83.8
16	Oyo/Osun	281	221	169	76.5
17	Plateau	220	124	00	0.0
18	Rivers	224	131	110	84.0
19	Sokoto	180	57	00	0.0
20	FCT	98	38	14	35.9
21	Katsina	380	176	81	46.0
22	Akwa Ibom	324	327	217	82.9
23	Kebbi	270	163	00	0.0
	TOTAL	8,398	5,431	3,333	61.4

Table 3.6: NCE Enrolments and Retention, 1997-2000 Cycle

Serial no.	State	Number enrolled	Completers	Qualified	Pass rate (%)
1	Anambra/Enugu	541	480	419	87.3
2	Bauchi	253	134	3	2.2
3	Edo/Delta	693	482	431	89.4
4	Benue/Kogi	840	553	370	66.9
5	Borno/Yobe	102	77	23	29.9
6	Crossriver	218	127	48	37.8
7	Adamawa/Taraba	182	107	42	39.3
8	Imo/Abia	601	451	356	78.9
9	Kaduna	220	118	16	13.6
10	Kano/Jigawa	1,669	393	107	27.2
11	Kwara/Kogi	211	134	78	58.2
12	Lagos	541	504	390	77.4
13	Niger	211	197	00	0.0
14	Ogun	51	41	34	82.9
15	Ondo	423	375	255	68.0
16	Oyo/Osun	151	100	60	60.0
17	Plateau	128	79	63	79.7
18	Rivers	138	14	0	0.0
19	Sokoto	326	121	0	0.0
20	FCT	246	110	21	19.1
21	Katsina	261	123	30	24.4
22	Akwa Ibom	230	190	128	67.4
23	Kebbi	285	123	0	0.0
	TOTAL	8,521	5,167	2,872	55.6

Tables 3.3-3.6 show that a large percentage of participants completed the course but failed to qualify. The great difference between number enrolling and numbers qualifying was said to be due to the inability of learners to secure funds to buy course materials, as teachers' salaries were, for many years, not regular throughout the year. This was why the strike among primary-school teachers continued up until the time this study was conducted. Also, some learners abandoned the programme for casual jobs that would provide them with the necessary income to live on.

Other reasons for participants failing to qualify include the following.

- Most of them failed to participate in the teaching practice, which is a compulsory and carries 40 per cent of the final marks for the course.

- Others failed to gain the 60 per cent pass mark for the theory component of the course.

- Some women dropped out as a result of their husbands' relocation.

- A high rate of withdrawal and non-completion is common in the Northern part of the country, particularly in the states of Bauchi, Niger, Kebbi, Adamawa, Sokoto, Plateau, Kano and Jigawa. Investigations revealed that most learners are farmers who prefer to attend to farm work rather than sit the final examination which, in most cases, falls within the farming period. This is also reflected in the low rate of enrolment in all levels of education from this geographical area. Efforts are currently being made to redress these imbalances.

- Some of the students had not submitted their projects at the time the final results were calculated. The number of qualified students stated in the above tables does

not include those who submitted their projects for grading after the calculation of results for graduation.

- Another possible reason for is that women who were single when they started the programme subsequently married and moved to the state where their husbands were resident. These women may have decided to suspend (or withdraw) from the programme owing to the pressures of married life.

Though it was practically impossible to support this with data, the NTI authorities considered this as plausible as they had already handled many cases of learners re-joining the programme a log time after dropping out. This justifies the view of Omolewa (1999) that rather than describing students who pulled out of study as 'drop-outs', it would be better to describe them as 'early leavers' as they could re-join later in the programme.

Teaching Practice

We found that there was a correlation between the aspirations of the NTI and what the teaching practice is to achieve. Though there was no opportunity to ascertain the reality of this, learners' records, teaching guides, teaching aids, and supervisors' assessment sheets were available for assessment. Discussions with some external examiners indicated that learners need to be more dedicated, as a lot of them failed to obtain the expected pass mark which has continued to affect the low number of graduates compared with enrolments.

Media

The major teaching/learning medium so far has been print. Electronic media – radio, television and others – are likely to be used in the future. The lack of electronic media in the delivery process remains a major drawback of the service provided by the NTI, as learners cannot benefit from the greater access to information associated with such media.

Study Centres

There are about 220 study centres for the NCE programme. A sample survey of the centres did not reflect favourably on the NTI. The expectation was that there would be well-equipped study centres with a learner-friendly environment and facilities in place to bridge the distance between the learners and the Institute. However, the Institute's practice of coordinating its programmes and activities with those of its partners at grassroots level has made good use of the existing facilities and opened up study centres wherever there are enough learners to justify one. The establishment of study centres in virtually all the NTI's areas of coverage, which would normally be to its credit, has, however, robbed the programme of its legitimacy as a distance-learning process. Learners receive many hours of face-to-face lessons, and the traditional roles of study centres – providing opportunities for contact with tutors and other learners, eliminating feelings of isolation, providing resources for revision and serving as a collection point for materials – tends to have given way to formal classroom situations which represent a serious threat to the fundamental principles of distance and open learning. This situation has been made worse by the reliance solely on print and the lack of telephone, radio, television and library facilities.

Organisational Structure

A comprehensive analysis of what we found on paper, compared with realities of activities of the NTI, demonstrated the sharing of relevant and meaningful information between both phases (before and after reorganisation) and among the various departments of the Institute. It was clear that a dedicated distance-education institution like the NTI has opportunities for independent review of its programmes to identify possible changes in the system without necessarily jeopardising its original goals. It was also noted that whereas integrated distance-education departments forming part of conventional institutions are faced with problems of incessant strikes by academic and non-academic staff, the NTI has continued with its programmes without interruption. In spite of this stability enjoyed by the NTI, a lot of doubt has been cast on the quality of course delivery and standard of its graduates compared with those of distance-education providers that benefit from the resources and expertise of conventional institutions. The participation of the academic staff of their own conventional institutions in the management and implementation of their academic activities gives integrated distance-education programmes academic credibility. In contrast, the NTI relies on the services of academic staff of institutions that are completely outside its control. It is hoped that the NTI's new structure will make for better performance, as more experienced educationists are now on its Board of Management.

Impact

From the Government's perspective, the goal of establishing the Institute has been largely achieved. The NTI has proved to be a capable and competent tool for the training of teachers, as well as opening up opportunities for Nigerians whose desire for higher education could not be met by the present formal system. This achievement has provided an appropriate foundation for the rekindling of plans to establish a Nigerian Open University. This has become evident in the recent public pronouncement of the Federal Minister of Education.

The NTI's performance also informed the adoption of distance learning for the Pivotal Teacher-Training Programme, which aims to produce trained teachers to fulfil the demands of UBE within a very short period of time.

From 1994 to date the NCI has upgraded more than 20,000 TCII teachers to the higher grade of NCE. This is a milestone in the history of Nigerian teacher training. During the course of the study, pupils of NTI graduates remarked that 'our NTI teachers' (as they are called) 'are not only good at teaching but they also perform parental roles that keep us in school'. They went further to say that they came up with innovative methods that are not like those of their counterparts who went through the conventional system. Thus the views of these pupils corroborate the views of independent observers who, said that NTI-trained teachers are better than those who spent three years with about twelve weeks of teaching practice.

Some of the graduates who were interviewed at random said that 'with our exposure and experience, we now realise the importance of education and we shall henceforth be in the forefront of promoting the education of our children. Again, those of us who have retired and taken to business are better off than those we met with little education.' These graduates now constitute pioneers in the rural communities that for years lacked

such a calibre of people, serving as role models for youths and at the same time representing community views in developmental forums.

And as a matter of policy, the NCE certificate now entitles its holder to direct entry to any of Nigeria's Universities, which hitherto had been restricted to Advanced Level holders, and graduates of the conventional colleges of education. Thus within the next few years university graduates will include NCE graduates. This has contributed to the Government considering very seriously the opening of an Open University.

The morale of the communities is high as they now assert that gone are the days when community schools were without the expected number of qualified teachers. Though there are still not enough qualified teachers, there are now a sizeable number who can ensure proper teaching for Nigerian children. This has given the teachers such a sense of commitment and belonging that they now contribute to the various activities connected with schools around them.

Conclusions and Recommendations

The lack of government policy on distance education has deprived it the NTI its rightful recognition. Arising from this is a lack of specific budgetary allocation for funding its programmes. It has also led to the indiscriminate establishment of satellite campuses by tertiary institutions under the name of 'distance education'. The lack of policy on distance education has allowed the practice of distance education without adhering to proper principles and practice, and because the quality of education delivered by such institutions is poor, distance education is seen as sub-standard. In fact this lack of policy has also affected the performance and management of the NTI, as it has not been guided by a dedicated policy of the FME.

A positive step towards addressing this problem arose from the meeting of the National Council of Education in August 2001, which ordered the National Universities Commission (NUC) to close down all satellite campuses in the country. In addition an appeal was issued to Nigerians aspiring to higher education to wait for the opening of the National Open University, which will start operations in 2002. Perhaps this could be the beginning of a promising future for distance education in Nigeria. The opening of the suspended Open University constitutes part of the package for the 'decade of distance education'. This will place additional responsibilities on the NTI as it is likely to be the nucleus of the administration of the Open University, and will provide the initial structure and expertise for its launch.

The NTI is also hampered by a lack of political will on the part of Government. If we are to learn from the experience of other countries, the Open University in the United Kingdom is a product of political will and this saw it through to maturity.

One important conclusion that can be drawn and that has influenced the government's position on distance education in Nigeria is that the NTI's teacher-training programmes have proved to be effective and beneficial to Nigeria's educational system. This has been reflected in the various teacher-training challenges that the Institute has been charged with in the last 20 years. The recent visit of the President of the Commonwealth of Learning and the follow-up pronouncements of the Federal Minister of Education on the imminent re-opening of the Open University represent a boost to the morale of the NTI.

Among the areas the Institute should improve on are:

- use of a wider range of teaching/learning media rather than continued reliance on print
- capacity building for both administrative and academic staff
- strengthening the learning capacity of the study centres through the provision of telephone, fax, video, computer and Internet services, as well as provision of counselling services.

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Rob Walker

4 United Kingdom: Using ICT to Support School-based Initial Teacher Education

Executive Summary

This chapter describes the use of ICT and distance education to support a school-based initial teaching training programme for graduates in the United Kingdom. The programme is provided by the UK Open University (OU) and reflects government policy to increase the role of school experience and the use of competency-based approaches in the initial preparation of teachers. The PGCE programme was established in 1994 by the OU, with funding and support from the Department of Education (the central government ministry), in the context of a national need to train more teachers, especially in 'subject areas of scarcity'. Soon after the programme began there were significant national changes in education policy and politics, which run counter to much of the philosophy and practice of the course. Following an adverse inspector's report on some aspects of the programme[3], the course was closed in 1998 at the end of its initial five-year period. A much revised course was introduced in 2002, but as a secondary-only programme.

Background

Table 4.1: United Kingdom: National Data

Population (millions)		
Size ('000 km^2)	245	
GDP per capita (purchasing power parity US$)	22,093	
Human Development Index	0.923	
Educational data	*Primary*	*Secondary*
Teaching force	283,492	464,134
Total '000		
'000 female	228,677	255,669
Gross enrolment ratio		
All students	116	129
Female	116	139
Pupil-teacher ratio	19	13

Source: UNDP, 2001; UNESCO, 2000; UNESCO, 2001; Note: population, size, GDP and HDI figures are for 1999; education figures are for 1996.

On conventional estimates, UK GNP was US$ 1,152 billion in 1996 (1998 World Development Indicators); on a PPP basis, the UK's GNP stood at US$ 1,173 billion in

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[3] The Open University notes that there was only one inspection of the programme in 1994-1996; all other inspections (1996-1999) were of individual courses. The final year of the primary programme was re-inspected, following the original critical report where prior criticisms were addressed. The primary course was awarded a mixture of satisfactory and good grades. The secondary course inspected was awarded five good and one satisfactory grade

the same period. Estimated mid-year population for the UK in 2000 was 59,755,700, the majority being resident in England. The UK's land area is 241,600 sq km.

Education System

There are 7,506,000 children in schools in England and 375,000 teachers (there are approximately 450,000 teachers employed in UK schools). The pupil/teacher ratio in England is 18.4 (http://www.dfes.gov.uk/statistics/DB/SFR/s0252/sfr15-2001.pdf). About half of teachers are in secondary education and half in primary schools. Class sizes are difficult to determine and variable, but generally primary classes have around 30 pupils and lower secondary about 25.

Each country in the UK has a somewhat different education system. Scotland and Northern Ireland have different curriculum requirements (and assessment systems); England and Wales have a broadly common system that is jointly administered. (This has changed since the introduction of the Welsh Assembly). The Postgraduate Certificate in Education (PGCE) programme offered by the OU was aimed mainly at the system in England and Wales, but also included students from Northern Ireland.

Schooling in the UK is mandatory for children between five and 16, and the majority of young people remain in education and training until they are 18. The organisational structure of schooling in the UK is complex, being both regionalised and localised. Even within one local system, some schools may operate on a first-school/ middle-school/ high-school basis, and others on primary-secondary system. Generally though, the system operates on a 5-11, 11-16, 16 -18 and 18+ basis, and the terms usually used are primary, secondary, further and higher education.

Teacher Education

Teacher education is managed nationally by a government body, the Teacher Training Agency (TTA), though the TTA was not in existence when the Department of Education and Science (DES) agreed to the setting up of the OU PGCE. Around 22,000 students are accepted on teacher-training courses each year in the UK (detailed figures are at http://www.dfes.gov.uk/statistics/). Generally the profession is ageing and a large proportion of teachers are aged over 40. Shortages remain in some key areas, including secondary maths, physical science, modern languages, music, and design and technology.

In order to teach, teachers are required to attain Qualified Teacher Status (QTS). Having attained QTS, teachers are able to teach at most levels of schooling; there is no separate registration for primary and secondary teachers. However, all initial teacher training is required to meet specific primary, secondary and post-16 regulations and therefore training for teaching is phase-specific. Applicants trained in a different phase are unlikely to be appointed by schools.

Teachers can acquire QTS through various routes, including taking an approved postgraduate course of training, which is generally one year full-time. In the past, teacher-training courses required full-time attendance at a college or university, but in the last few

years flexible courses have become more common[4]. Increasingly, prospective teachers are looking to attain QTS by alternative routes (which include attachment to a school approved for training purposes[5]. The new version of the OU course allows some people to take an 'assessment only' route to QTS, which involves a period of teaching practice and a series of assessments to meet, but no specified training.

Distance Education in Teacher Training

As Prescott and Robinson (1993) point out, the development of distance-education initial teacher training in the UK is at first sight surprising. Yet, currently, 24 UK higher-education institutions offer flexible and/or distance courses in initial teacher training, though the OU was the first institution to develop a fully distance programme.

Origins of the Open University PGCE programme

The OU programme arose less from a choice of distance education by initial teacher training (ITT) policy-makers and more from an attempt to expand into ITT by the OU. In the late 1980s, the OU was looking to increase student numbers in education as the demand for its undergraduate units declined. Initially these units had been very popular, the majority of students enrolling being teachers with certificate-level training looking to upgrade their qualifications to degree-level as the education system looked towards teaching becoming a graduate-entry profession. The courses provided were all academic courses, involving no professional accreditation. Nevertheless, in the 1980s the OU claims it was receiving as many as 20 letters a week from students asking if teacher training could be provided. Later information suggests that as many as half of OU students were interested in such courses, science and maths being among the most popular subject areas.

Within the OU, the problems of managing initial teacher training had always been thought difficult to overcome within distance programmes. Although there was support from the vice-chancellor and other senior staff for the development of teacher-training programmes, there was a view, widely held within the OU, that distance education was not well adapted to provide professional training. The particular model of distance education developed by the OU, and deeply inscribed in its organisation, practice and values, assumes high investment in materials, funded by large student enrolments and significantly lower levels of face-to-face tuition than in conventional institutions. This model has been very successful in providing initial degrees to adults across the academic range and (somewhat surprisingly, specialist masters programmes). Prescott and Robinson (1993) provide a good overview of OU education programmes prior to the establishment of the PGCE.

The OU has become well known for its inventiveness in overcoming such problems as how to keep teaching current with research and how to teach science at a distance. The

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[4] While 'flexibility' is a term used generically in distance education, the term 'flexible route' is used by the TTA specifically to describe those routes that meet the modular regulations introduced in 2000. These are the regulations that the new PGCE programme is designed to fit.

[5] The variety of routes includes school-centred training (SCITT) where postgraduate training is provided by an accredited school and employment-based route, where an employed graduate can be trained on the job – the latter does not require training in an approved school. Both these routes lead to QTS, but the SCITT courses can lead to a PGCE if accredited by a higher-education provider.

move of the OU into professional training presented new challenges, in particular to the deeply entrenched separation between content providers – course writers/developers (based centrally) – and tutorial support (provided regionally).

From the contemporary Ministry perspective[6] much of this scepticism about the capacity of distance programmes to train teachers was shared. Among civil servants and advisory committees, initial teacher training was still considered to be primarily an apprenticeship rather than an academic taught course, and so not readily amenable to distance provision. Needless to say, other providers were also critical of the concept (and anxious to protect themselves from competition). The Department was also sceptical as to whether the OU could recruit the numbers necessary to sustain a programme, but they commissioned a study that surprised them in that it supported the OU view that there was more interest among potential students than expected, especially in the key subject areas of science and maths. The study suggested that there was an untapped market for training that had not been reached, despite the large sums spent by the government on advertising for teachers (with apparently little success). Potential students tended to be older (typically in their 30s, mostly female and with a strong interest in teaching science and maths).

The OU's academic and organisational context, namely a strong academic programme but no tradition of ITT, is an important factor in understanding the OU PGCE programme from within. (This view has shifted radically in the past 10 years with the increase in web-based training). The OU had few staff with recent teaching or teacher-training backgrounds, no administrative history of organising and managing relationships with schools and student placements in schools, and few established networks among teachers and schools. Furthermore, the OU has a national reach, while most ITT in the UK is based on regional provision and local networks.

Initially, the OU offered supporting programmes in professional studies to existing providers, who in turn managed school practice. This proved difficult to sustain, as numbers were too small for the OU to recover costs and the diversity of programmes across institutions made standardisation difficult. From this experience, from the market research that had been done and from the need of the Faculty to find new students, the PGCE programme was developed. What persuaded the officials that distance education provided a viable ITT option was that, faced with shortages of teachers, particularly in key areas of secondary maths and science, the evidence was that the OU was well-placed to meet this need.

In 1988 Bob Moon was appointed as Professor of Education from a position as headmaster of a well-known secondary school. Having networks within policy circles, he began building the basis for an ITT programme. In the late 1980s, the OU began surveying its own graduates in order to test the demand for teacher training. The results were surprising. It appeared that many OU graduates were interested in training to teach but faced access problems in terms of existing course provision. Jenny Leach and Bob Moon (1997) summarised the research by identifying these key findings.

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[6] The Open University notes that DES (and then DFE) was very supportive. When control moved to the TTA, the OU feels that in its early years the TTA did not understand the logistics and cost structures of distance education to scale.

- The average age of those expressing an interest was 33.
- The two most popular subjects for potential secondary teachers were mathematics and science.
- Many more potential primary teachers had degree-level qualifications in mathematics, science and technology than is normally the case.
- Higher than usual numbers of women expressed interest in science and technology courses.
- Higher than usual numbers of potential students came from ethnic minorities.

It was on the basis of this evidence that the Ministry was persuaded to establish a distance ITT programme. In developing the case, a key element of the argument was the OU's need to establish a large programme in order to fund an appropriate level of materials production and to create the course materials that were needed. A small pilot programme was not an option.

Purpose, Level and Curriculum

The essential role of the programme was 'to widen access to teaching for those who require part-time, flexible course provision' (Leach & Moon, 1997).

Nature and Educational Background of Audience

At the time when the course was developed, there were two main routes to QTS through ITT courses in the UK. Some students studied education at undergraduate level as all or part of a degree. Others completed a subject-based degree first and then did a one-year post-graduate certificate in education. The OU course is a post-graduate course for anyone who could not access conventional courses (which were usually full-time or locally-based in a higher-education institution), having entry requirements common to all ITT programmes in the UK. Only 14 per cent of students on the OU PGCE programme had a degree from the OU. (This is the figure for the 1999 cohort, but the figure for other cohorts was similar).

Curriculum and Balance Between Key Components

The course was conceived as a general ITT programme in primary teaching, and a subject-specific programme in secondary teaching. The secondary subjects initially offered included, French, maths, science, design and technology, history, English and music.

The course is organised into three stages, each with a linked period of prescribed teaching practice.

- Stage One requires 60 hours' study and three weeks' practical training in a partner school, directed and assessed by the mentor and the school co-ordinator.
- Stage Two requires 270 hours' study and four weeks' supervised teaching in the partner school. In addition there are two weeks 'Teaching in Another School' (TIAS).
- Stage Three requires 120 hours' study and six weeks supervised teaching practice.

During the course there are also a number of day schools run by the regional tutor.

Given the graduate-entry level of the course, the course itself focuses only on ITT. Basic education is taken for granted, though there are requirements for students to demonstrate subject-specific knowledge at entry and throughout the course[7].

Students are provided with a range of study materials. These include:

- Study Guide
- resource packs related to each stage of the course
- School Experience Guide, including prescribed activities to be carried out in schools
- video- and audio-tapes
- Professional Development Portfolio
- set texts
- course readers
- computer-based conferencing
- assessment guides

Implementation

Professional training programmes are complex to implement compared to conventional academic programmes. Timing and co-ordination, the need to consult with interested parties and statutory bodies and the nature of the judgements made in assessing students all require a distinctive approach to course development.

Materials Production

A team assembled by the OU School of Education managed the production of curriculum materials. One-third of the team were appointed from within the OU, but the majority were specifically appointed from positions in schools and teacher-training institutions.

A significant part of the material was commissioned, drawing on external people with acknowledged expertise in specific fields. A key consultant to the course during its development phase was Professor Ted Wragg, a respected academic in teacher education and a persistent critic of government policy in education.

Student Support

Student support is provided by the schools and also by the Regional Offices of the OU. The OU has an established network of Regional Study Centres that provide tutorial support to all of its students. Part-time tutors (many of whom are local teachers and local teacher trainers from other institutions) are recruited as personal tutors to students (on a 1:12 ratio).

The ITT course puts new demands and new pressures on this support system. OU tutors generally are required to provide academic support at particular moments of the course, not to be on hand on a continuing basis or expected to deal with the continuing anxieties or concerns that are endemic in professional training. The role of intervention to support

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[7] There are specific entry requirements that require a match between the applicant's degree profile and the school curriculum for the subject they wish to teach. Once accepted on to the course, candidates must complete a regular end-of-stage subject audit to show the development of their subject knowledge against the school curriculum. Guidance on subject auditing and developing subject knowledge is given in the course materials.

students where there are progress issues requiring visits to schools was taken on by the regional staff tutor and, in the latter years of the programme, by a new category of OU tutor, the subject-specific visiting tutor. In the new programme the school-visiting function as well as the day-school, tutorial and assignment-marking function have all become integrated into a single subject-tutor role.

Another source of student support lies in self-help groups. Some of these are informal student groups, but this also became a key role for computer-mediated communication (see below).

Arrangements for Teaching Practice and Its Supervision

Teaching practice is located in a school nominated by the student as part of their application to the course. (In the new PGCE students are allocated to OU Partner Schools by the programme staff). Schools are asked to interview students as part of the application process. Schools are vetted by regional staff to ensure that they meet criteria established by the course.

Two staff members in the school form a key part of the teaching programme for the course – a *mentor*, who works closely with the student providing training and assessment in school, and a senior member of the school, designated as a *school co-ordinator*, who takes responsibility for the student and confirms all school-based assessment judgement made by the mentor. The mentor and school co-ordinator train, support and assess the work of the student in the school. The OU provides training for people in both these roles.

When applying for entry to the course, students nominate a school willing to accept them as trainees. The school is approved by the regional tutor and the roles of mentors and school co-ordinator assigned to teachers in the school. The mentor and co-ordinator are responsible for school-based assessment, except in the case of borderline students where all assessment is confirmed through OU staff visits. In the latter years of the programme, school visits by tutors to confirm assessment judgements and for quality assurance purposes were instituted for all categories of student at Stage 2 and end-of-course. In the new model, school visits by tutors for student assessment and quality assurance purposes occur in every school placement.

Assessment

National guidelines are produced for the assessment of teacher-training programmes and these are followed and adapted by the OU. Students submit one or more tutor-marked assignments (TMAs) on completing each stage of the programme. Each TMA is assessed and marked by the tutor. Students also prepare a portfolio of completed school-based activities, which is assessed by the mentor and school-co-ordinator and provides evidence in support of the school report completed by the mentor and school co-ordinator. End-of-course assessment is based on the Professional Development Portfolio, which students submit to the OU course team at the end of the course. The portfolio includes contains all TMAs, coursework, all completed school-based activities and school-practice reports and assessments made by the mentor. A five-point grading scale is used on all assessed components throughout the course for formative assessment purposes, but the end-of-course result is determined by demonstrating all the competences for the course and this leads to a pass or fail.

Accreditation and Quality Control

The course is accredited by the Open University, but like all ITT courses is open to scrutiny by the Teacher Training Authority (TTA http://www.canteach.gov.uk/index.htm) and subject to inspection reports from the Government Office for Standards in Education (OFSTED) (http://www.ofsted.gov.uk/). The TTA approves programmes, allocates student numbers and oversees programme quality. Detailed inspection is provided by OFSTED (Office for Standards in Education).

University courses are monitored through a system of peer assessment (external examiners) and also by a government body, the QAA (Quality Assurance Agency). The QAA does not directly monitor ITT courses but does oversee qualifications. To external observers this organisational complexity might seem bureaucratic in the extreme and a recipe for confusion and political infighting. Many insiders would find it difficult to refute the claim.

Funding

Target student numbers for the course are allocated by the TTA. Tuition costs for ITT students are funded by central government, living costs are provided by local government (who reclaim these costs from central government). OU students are unable to claim living costs as they are assumed to be part-time students studying from home. (Part-time students are now able to claim bursaries offered by the TTA to attract students in shortage subjects.)

Sustainability

The course ran from 1994 until 1998 and will restart in 2002 after a period of redevelopment (see note 1, p. 67). The course is free-standing and so competes with courses provided by other institutions and, increasingly, with alternative routes to QTS that are currently being expanded. An emerging issue is the increased competition that exists in many areas for school placements. Now that schools are able to offer a full-training programme to QTS, many prefer to do this (and so receive the full funding provided) rather than take in students from higher-education institutions.

Currently in the UK, the major issue is a concern with a shortage of available teachers in schools (not in all areas, but in many) rather than with salary costs, though many in schools and professional associations would claim that the two are linked. This appears to be linked to demographically-related and growing shortages of skilled professionals across a range of occupations, even those with high salary levels. There are, for instance, currently labour shortages in medicine (general practice and hospital medicine) and in systems engineering.

Technologies

The OU is a pioneer in distance education and has set the standard for print-based materials and for video and audio production. It has also moved in recent years to experimentation and to more use of web-based and other information technologies. As a large organisation, it is sometimes said to be slow to change, and some newer universities have been quicker to seize on the potential of new technologies, unencumbered by the need to maintain large-scale existing courses. Competition is intense.

A key issue that has emerged has been around questions of scale. The OU is sometimes characterised as a 'Fordist' organisation – dependent on large-scale, high-volume throughput

to minimise unit costs. In recent years, other institutions have moved to more 'boutique' forms of distance provision – offering smaller, tailored, flexible courses in negotiation with sponsoring agencies and employers. The OU model continues to offer high production standards and quality content, but has proved difficult to manage in times of rapid change or in response to sudden changes of policy or market shifts. The new OU PGCE programme seeks to address this issue by delivering all materials via the web to meet the demands of a rapidly changing external regulatory environment. The effectiveness and cost of sustaining this model has yet to be tested.

To some extent this issue hinges around media questions, particularly about print production and web-based materials. The OU staple has been print, but it is increasingly moving to web and web/print hybrid formats. The questions this raises are not just technological but involve changes to established practice by faculty, administrators, tutors and students. They involve questions about the nature of work and the workplace, not least for those who are training to be teachers in a context in which schools, too, are beginning to face similar issues.

Constraints on Technology Choice

The OU has long-established use of text, video and audio in all its courses. Although many PGCE students were new to the OU, the OU is well-established enough that students come to the course expecting to need TV access and study space within the home or at work. They are also well aware of the need to establish working patterns and time management practices to ensure successful study. Following a series of major programmes by government (in Europe as well as in the UK) and the fall in costs, home computing is now virtually ubiquitous. UK government figures for October 2001 estimate that 40 per cent of households have Internet access. Students enrolling in the new course are expected to have good computers, and in the new course video is supplied on CDROM rather than on cassette.

In the mid 1990s, the use of computers for conferencing presented a different problem. At this time, most home users were used to word processing but were unlikely to use computers for communications (or for web access, which was then in a primitive state). The OU took the bold step of providing a computer and modem for each student who enrolled. This was not without problems (modem access was somewhat problematic, telephone charges could be very high for remote students) but, nevertheless, conferencing became a central feature of the programme.

Changes in the Use of Technology

Initially, the course used CoSy, a command-line interface that was intractable to most users. In 1995, the OU adopted First Class, a conferencing system that provided for both synchronous and asynchronous communications and allowed users to attach documents without too many problems of machine compatibility, users having different operating systems or other software. This is a much more intuitive interface and looks similar to an Apple Macintosh desktop. The OU provided First Class to all PGCE students (1,100 in the first cohort). Students were also provided with a Macintosh computer, modem and Claris Works software. This equipment was to be given to the partner school at the end of the course, though it seems that many students either bought the equipment back from the school or replaced it with a more modern machine.

Usage has been high: an internal study reported that in one month there were 18,636 log-ins by 1,117 students and 125 tutors, an average of four sessions per person per week (Leach & Moon, 1997). Michelle Selinger provides several useful and detailed accounts of the use of IT in the OU PGCE, which suggest that students gained considerable confidence in the use of IT, used it for emotional support and learnt from asynchronous discussion how to reflect on discussion and advance their conceptual understanding. Selinger reports examples of the uses students made of First Class (Selinger, 1997). These include:

- seeking help
- sharing resources they had found or created
- offering support and working collaboratively
- seeking teaching ideas
- clarifying concepts
- sharing enthusiasm
- sharing recent developments
- engaging in debate
- connecting children
- seeking jobs.

These uses are as much emotional as intellectual (a finding also reported by others in the field). Computer conferencing appears to fill an important function in countering the isolation of distance learning and helping to build a sense of student community and perhaps cohort identity. This is always important, but perhaps particularly so in a professional training context.

As Selinger points out, conferencing was not part of the teaching programme of the PGCE, but it proved a valuable source of learning (Selinger, 1996, 1997; Benson & Selinger, 1998; Moon et al. 1995, 1996). During the latter years of the programme, use of First Class e-conferencing became a compulsory feature in order to ensure that updates to the course could be made available to students in line with changes to external regulations. The use of e-conferencing was evaluated throughout the programme.

Contributing to the conference was not assessed and so the fact that it was heavily used would seem to indicate that its intrinsic value to students (and tutors) was high. The new course continues to make more extensive use of First Class conferencing (which is itself now web-based).

Costs

The Government provided the initial investment, with a grant of £1.2 million, which has not been recouped through fees or other income. A key argument in establishing the programme was to build an educational infrastructure that could be extended in future, but this did not include funds for remaking the programme (OU courses generally operate on a five-year remake cycle).

Once the programme began, the OU received £3,900 per student in fees from the government. (In the UK, PGCE fees are not payable by the student.) This is comparable to the funding provided to other PGCE programmes. While these fees are in line with costs at other institutions, students in full-time study are eligible to apply for maintenance grants

of up to £4,000, which are not available to OU PGCE students. The OU sometimes use this to claim that the OU PGCE is 50 per cent cheaper than other UK PGCE programmes. It could be argued, however, that these costs are not due to efficiency but are borne by the student (in providing home study space and so on).

25 per cent of the fee income is allocated as overheads by the OU lower than in most conventional programmes); the rest goes to fund the programme. Of this £1,000 per student goes to the schools. After purchasing computers, the actual cost of the distance element of the programme is around £2,050 per student per year.

An important element in calculating costs is that most UK PGCE courses need to recruit their target numbers in order to remain viable. The TTA also operates penalties for under- or over-recruitment. This has proved difficult to manage in recent years, and a number of institutions are considering closing at least some elements of their programmes. In theory, the OU PGCE is more readily scalable than conventional courses, since many of its costs are fixed costs, particularly the time that academic staff have invested in materials creation.

The OU also claims that the materials are often suitable for use in other courses – at masters level, for example, and in in-service programmes. Sales figures for the PGCE course readers suggest their widespread use. (For recent figures see Appendix 4.)

In 2000 the government revised payments, and now pays a £6,000 'training salary' to students, plus (for those teaching design and technology, modern languages, maths and science) a further £4,000.

Outcomes

The key findings of the study are outlined below.

Access

Access to the course is very competitive. The primary course in particular was heavily over-subscribed. Students are accepted in order of application, and to get a place many will courier applications to the OU on the day applications open. About 75 per cent of students enrolling are female and the average age is 33. The high proportion of female students is typical of UK ITT programmes, but the average age is much higher.

Enrolment

The aim of the course was to train 5,000 teachers over a five-year period, and it came close to meeting this target.

Table 4.2 shows the number of students enrolled, the number of these attaining QTS and the percentage success rate in terms of completion.

Table 4.2: PGCE Enrolment and Completion Rates

	1995		1996		1997		1998		1999
	Enrol-ments	QTS	Enrol-ments	QTS	Enrol-ments	QTS	Enrol-ments	QTS	Enrol-ments	QTS
Primary	416	324	695	557	412	316	340	326	-	-
Secondary	852	604	799	593	693	532	572	410	429	315
Total	1,268	928 (73%)	1,494	1,150 (77%)	1,105	848 (77%)	912	646 (71%)	429	315 (73%)

Ann Shelton Mayes of the OU comments:

> 'The completion rate is very good compared with other OU programmes, and is indicative of the specific difficulties facing students who require a part-time study route. Monitoring of withdrawals has confirmed that withdrawals are linked primarily to personal circumstances, such as family illness and financial pressure.' *Personal communication 18/12/01)*

Quality

In 1998 the course was awarded the prestigious Queen's Anniversary Prize, yet shortly after was criticised by OFSTED[8]. The course has influenced developments in other countries (South Africa, Albania and USA, for example) and its use of First Class conferencing is generally acknowledged world-wide as exemplary.

Effectiveness

From their own research studies, the OU makes a number claims in terms of effectiveness. By June 1999, the destinations of 761 students from the 1997 cohort had been identified (90.3 per cent of all those who gained QTS). Of these 585 (76.9 per cent) were in teaching posts, with a further 128 (15.2 per cent) intending to teach.

A telephone survey of OU primary PGCE students in July 1998 investigated the employment status of students one, two and three years after completion for the 1996, 1995 and 1994 cohorts, respectively. This survey established that:

- 76.9 per cent of students were in post as teachers, the percentage being the highest (78.5 per cent) three years after completion
- although 76.9 per cent were in post at the time of the survey, 84.3 per cent had held at least one teaching post since completing their PGCE
- only 21 students (2.5 per cent) had not entered teaching and did not intend to do so. This compares favourably with national statistics
- only 18 students (2.1 per cent) had entered teaching and decided to leave the profession
- 21 per cent of respondents had been promoted to positions of responsibility, with 32 per cent of respondents from the 1994 cohort having been promoted within three years.

England and Wales national data indicate that the percentage of newly qualified teachers who take up teaching employment within eight months of qualifying decreases with the age of the students. Analysis of OU data by age indicates the following (Leach & Moon, 1997).

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[8] Judgement, in part, had been based on inspectors' reports following the first presentation of the programme. New regulations for PGCE courses were introduced shortly after and aspects of the provision, particularly at primary level, were criticised in the process of inspection, under newly developed OFSTED inspection criteria that were applied to all teacher-training institutions. Other well-known providers of primary training were similarly criticised. The re-inspection of the course, in the following year, against another (the third) OFSTED inspection framework proved successful.

- The employment status of OU PGCE students within a year of completion shows a similar variation with age to that shown by national data, but the telephone survey suggests that the percentage of older mature entrants in employment increased in the second and third year after completion.

- The mean age of OU PGCE students is significantly higher than for the national cohort. On this basis, the percentage of OU students entering employment might be expected to be below the national figure.

- The data show that 89.8 per cent (1996) and 80.1 per cent (1997) of students aged 30 or under were employed in teaching within one year of completing the course. These figures are comparable with national statistics.

Management of Distance-Education Processes

No reports are available on the management of the process, though it is clear from interviews and discussions that considerable strain was put on the OU system by this programme. A key problem concerns the management of student support. The programme put a lot of work into developing the mentor role in schools but the tutors (who were also members of the PGCE programme team) found themselves often caught between the expectations of the course team and the Regional Offices. The Regional Offices, for their part, found themselves on unfamiliar ground (managing a professional preparation, as opposed to an academic course). The PGCE was felt to be costly to manage and demanding on staff, since tutorial support is separately managed by the OU; and outside the faculty structure there seemed to be no accountability back to the course team for increased tutorial demands[9].

Within the School of Education, the ITT programme created strains in terms of different ways of exercising authority and managing work practices. The programme eventually set up its own Centre (CRETE: The Centre for Research and Development in Teacher Education), with its own staffing and temporarily located outside the main campus.

Particular Strengths and Weaknesses

An early problem encountered by the OU was that students worked too hard and had to be counselled into adopting a reasonable workload.

One problem that might be expected – ensuring quality of provision within the school experience – was a source of some concern within the OU. The OU team attempted to assemble a 'curriculum for the practicum', a sequence of work-based tasks and assessment. Schools were given an 'activity guide' that students were required to complete, and this was directly linked to completing the school-based activities and assignments that were presented in the assessment portfolio. Quality assurance procedures included visiting all borderline students, visiting a sample of schools and visiting schools where insufficient information was given in school reports. During the latter cohorts all students and schools were visited for quality assurance and assessment purposes (Shelton Mayes & Banks, 1998). In the new

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[9]The Open University comments that both regional staff and central academic staff were operating outside the conventional roles assigned by the OU, due to the different demands required for professional training involving partnership with other institutions. The tension here is not simply that of regional members of the PGCE programme team in the context of established ways of working in the regions, but of all the members of the PGCE programme team working outside the established patterns.

course, the OU exercises more control over the school experience through subject-tutor visits on each school placement as well as final assessment.

Managing the tutorial system was a demanding task, and Regional Centres had to adjust to the new demands of professional training. The allocation of the cost of tutorial activities was a significant issue within the OU, which conventionally separates out tutorial costs from the costing of the work of the Faculty.

In terms of content, OFSTED criticised the primary programme and some of the subject areas. However, looking at the nature of the criticisms, this can be regarded as concerning shifts in policy rather than weakness in content.

Conclusions

The OU has been very successful in developing and delivering high-quality courses at undergraduate and postgraduate levels. The educational model developed and adopted by the OU invests time, imaginative effort and funding into the writing, production and design of learning materials. These include text, audio-visual material and, increasingly, the new media. In order to recoup these high costs, courses need to recruit and retain large numbers of students.

The move of the School of Education (now Faculty of Education and Language Studies) into ITT created a considerable challenge to this model. The provision of tutor and mentor support required planning and negotiation with the schools and Regional Centres, as did the supervision of students in practice situations. The creation of a student community offering mutual support takes on special characteristics in a training environment (compared to an academic course). The adoption of First Class conferencing has been successful in meeting this need for many but not for all (tutors or students). The course materials are of a high quality as are the courses in each subject area.

Needless to say, creating a course of this kind in an institution that had little experience of professional training was a significant task and not without strains. What the programme found most difficult to deal with, however, was not the pressures within, but the pressures from without. In the mid-1990s, teacher education was radically transformed by direct political action. Curricula and inspection of courses were brought under government control and ITT courses were standardised and monitored. The OU found it very difficult to turn around its programme, which to some extent was set in its materials and structures – hence the adverse inspection report of the 1997 cohort[10]. Changing needed a long lead time, space in which to manoeuvre and clear visibility.

That the course has revived and continues provides a valuable moral. The message seems to be that as well as commitment, energy and effort to create a course of this kind, and the organisational ability to deliver it effectively, you also need a good deal of persistence to maintain it.

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[10]It should be noted that the re-inspection of the 1998 cohort was successful and that other OU PGCE course inspections (such as mathematics) were successful.

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Appendix 1: Questions Asked in Interviews With OU Staff

1. The pre-world of the programme

Why did the OU want to move into this area? (What were the internal politics? And what were the external politics?)

What were seen to be the gains and advantages at the time?

What groundwork was done (within the OU, with the DES, with prospective students, etc.)?

What were the key things that persuaded people to go ahead?

2. Setting up the programme

How was the programme funded? (What issues were there around funding?)

What were staffing needs for the development (and delivery) of the programme? (How were these met?)

What issues arose around staffing, organisation and training? (My understanding is that most were newly appointed and did not have DE backgrounds. Does this mean that there were training needs?).

How was the curriculum conceptualised and constructed? (What difficulties arose, if any?)

What was new about this course (compared to previous OU courses)?

How did existing production structures cope with the demands of a professional course? (text editors, BBC etc.)

What critical decisions were made at this time – about recruitment? placement? assessment? tutorial support? mentors?

3. First implementation

How were recruitment and selection managed? (I understand that there was high demand from students.)

What anticipated and unexpected issues arose in the early days? How did the team respond?

What stresses were created within the OU structure? (Relations with Regions, tensions between academic and professional needs etc.)

At what point was First Class conferencing introduced?

How did this come about?

4. OFSTED and after

From the outside it looks as though the course became caught by fast-changing policy and was unable to respond as fast as it needed to (given the OU model). Is this the case?

5. The new programme

What has been learned?

How does the course relate to other developments – graduate entry schemes etc?

What is new (in terms of such things as increased flexibility allowed by the web etc)?

What are current curriculum issues? (Does the DFEE see the course as an efficient way of delivering the national curriculum, for example?)

What are the most likely future developments?

Appendix 2: The OFSTED Reports

The OFSTED Reports of 1998 on the secondary PGCE can be found at http://www. ofsted.gov.uk/inspect/itt.htm. The primary and secondary reports are available as published documents. On 16 October 1998 the *Times Educational Supplement* (TES) published an article, under the headline 'OU ban looms after damning inspection', reporting that the Open University was closing its Primary PGCE for two years while it re-thought the course.

The TES reported that the OFSTED inspection had reported that, of 14 components of the Primary PGCE, six were found to be 'adequate' – which implies that they required 'significant improvement'. The remaining eight were deemed to be of 'poor quality'. The secondary courses fared better but were all criticised and given low grades in some areas[11].

From an OU perspective, there was a feeling that the goalposts had been moved. The OFSTED inspection was made earlier than they had expected. The OU PGCE's first inspection – a programme-wide inspection – began in 1993, prior to the first cohort, and lasted until 1996, mid-way through the second cohort. It was the second set of regulations and accompanying inspection framework that resulted in some critical grades for OU (and other providers). The third inspection framework, brought in after widespread criticism from higher-education institutions, resulted in more balanced judgements.

Through this process, the OU felt there was little understanding of distance education or of the nature of part-time/home-based study on the part of the inspectors. This was a time in the politics of education where there was intensive in-fighting between different agencies (OFSTED, the TTA and the DFES) and the OU (as other teacher-education institutions) felt itself caught up in other people's battles. Their view was that they had good feedback from students and schools and were succeeding in maintaining good retention rates with a group new to teacher education. The OU, while naturally upset by the reports and the publicity they brought, considered with hindsight what the OFSTED reports reveal is a structural issue in relation to distance courses constructed on the OU model. It is reported that a more considered approach to the inspection of alternative routes is now being adopted.

Given the heavy investment in materials development, OU courses are generally planned to be offered for a five-year period before materials are revised and updated. This works well in many subject areas, but during the 1990s, schooling and teacher education underwent radical change in England and Wales. There was a marked shift to more centralised control over curriculum and assessment, a move to shift teacher education into schools and to cut back college-based courses to a restricted range of topics, mainly concerned with the implementation of the national curriculum. The requirement that PGCE courses be assessed by OFSTED was part of a political move to excise 'progressive educational thought' from teacher education and from the profession more generally.

The OU PGCE did not have the resources to respond rapidly and flexibly to the policy turn within government. The OFSTED reports are the consequence of this inflexibility. Conventional institutions were, in many cases, better placed to change quickly, to manage impressions and to pick up the new language emanating from policy circles.

Appendix 3: The Revised Programme (from 2002)

The revised programme is similar in many respects to the previous programme. The main differences are that:

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[11] The Open University notes that this does not reflect the way the grades are awarded. For example, many of the cells are linked – that is, a poor grade in one cell means that other cells must be graded the same. A poor grade can be based on the performance of a single student. The highest grades are only awarded if 80 per cent of all students performed at the highest level possible. There are excellent published reports on the problems with the OFSTED inspection methodology applied during this period.

- only secondary subjects are being offered (design and technology, modern languages, geography, music, mathematics and science)
- greater use is being made of the Web for delivering and updating course materials
- the programme can be taken full-time of part time
- the programme offers flexible starting and finishing dates.

On enrolling, students are given an individual 'needs analysis', involving two weeks' school placement, and offered three main routes to QTS and PGCE:

- assessment only: a 10-week period of school placement plus assessments with no training
- students enter at a specified level with an individualised module study plan and linked school placement programme
- students take all three levels of the course involving 24 weeks' school placement, with a training curriculum in an OU partner school, supported by a mentor and school co-ordinator, modular study at each level; personalised subject knowledge development, a subject tutor who trains and assesses the student at each level including visiting school.

Students are provided with an individualised training plan for course completion that is monitored and amended at interim assessment points.

Appendix 4: Sales Report for PGCE Readers, 14 December 2001

Thinking through primary practice Bourne
TOTAL SALES 9,225

Teaching and learning in the primary school Pollard and Bourne
TOTAL SALES 16,529

Teaching English Brindley
TOTAL SALES 9,335

Teaching mathematics Selinger
TOTAL SALES 5,583

Teaching science Levinson
TOTAL SALES 4,839

Teaching technology Banks
TOTAL SALES 5,192

Teaching modern languages Swarbrick
TOTAL SALES 6,291

Teaching history Bourdillon
TOTAL SALES 6,668

Teaching music Spruce
TOTAL SALES 4,251

Teaching and learning in the secondary school l Moon and Shelton
TOTAL SALES 24,633

JOÃO BATISTA OLIVEIRA

5 Brazil: Television-plus: Journalism in the Service of Teacher Education

Executive Summary

This chapter describes A-Plus, a 15-minute television programme broadcast throughout Brazil. The primary audience is teachers; the secondary audience comprises educators, parents and viewers in general. A-Plus is broadcast daily with three re-runs. The programme contents are primarily determined by the viewers, who are contacted by a number of means. Programmes typically describe two or more alternative, complementary, different or even competing or conflicting strategies for dealing with problems faced by teachers in schools. Viewers are encouraged to extend typical school issues to their daily lives. The potential audience of the Futura channel is over 40 million, of whom over 13 million watch it regularly. A-Plus is the preferred programme, consistently attracting 20 per cent of the total Futura audience. The implementation, costs, results and impact of the programme are discussed. Lessons are drawn from the case study in order to evaluate A-Plus as well as other programmes geared towards providing continuing education for teachers.

Background

Brazil is a land of contrasts. Economist Edmar Bacha once described it as Belindia, a country where over 85 per cent of the population live like the majority of people in India, and 15 per cent like people in Belgium. Brazil had a Gross National Product reaching US$ 500 billion in the year 2000, has a population of about 169 million and per capita income of around US$ 3,000. However, less than 1 per cent of the population controls 13 per cent of the national income.

Brazil is the world's tenth largest economy, but its Human Development Index is 74th. The minimum wage is US$ 1,200 per year (US$ 8 per day). Over 54 million people live at or below the poverty line: they can afford to eat, but little else. About 50 per cent of poor people live in extreme poverty (less than US$ 18 per month per capita). The average household's monthly income is about US$ 125, and over 22 million households (about 88 million people) have incomes below this level (Institution Brasileiro de Geogradia e Estatistica: 1999: PNAD). Over 75 per cent of the population lives in urban areas.

For marketing and other research purposes, the population is usually divided into seven groups, as shown in Table 5.2. The scores reflect the possession of a certain goods and access to services. The comments in the last column serve as a rough guide to give the reader some idea of the actual standards of living of each group. On average, households consist of four people, while poorer households tend to have more.

Table 5.1: Brazil: National Data

Population (millions)	168.2
Size ('000 km^2)	8,547
GDP per capita (purchasing power parity US$)	7,037
Human Development Index	0.750

Educational data	Primary	Secondary
Teaching force total '000	1,388,247	326,827
'000 female	--	--
Gross enrolment ratio		
All students	125	56
Female	24	--
Pupil teacher ratio	24	17

Source: UNDP, 2001; UNESCO, 2000; UNESCO, 2001; Notes: population, size, GDP and HDI figures are for 1999; education figures are for 1996;

With a few exceptions, Portuguese is the national language, spoken and understood throughout Brazil.

Table 5.2: Population by Income Level

Class	Scores	Income bracket (US$)	Average household income (US$)	Comments on the standard of living
A1	30-34	> 2,777	5,894	Includes well-off and rich people
A2	25-29	1,472-2,777	1,871	Upper middle class
B1	21-24	885-1,471	1,222	Middle class
B2	17-20	532-885	807	Lower middle class
C	1-16	248-532	422	Poor
D	6-10	131-248	217	Very poor
E	0-5	< 131	114	Extremely poor

Source: ABA, ABIPEME and ANEP

Access to Television

Over 36 million out of a total of 40 million households have a television and are able to receive signals from a dozen or more national and local television channels – mostly commercial, private channels. There are three educational television channels with national coverage, and many local educational and community television channels. About 1.8 million households receive television signals by pay-television (including cable and satellite), and another 9.8 million through KU or C band (parabolic antenna). More than 50 per cent of the 118,000 urban schools are connected by antenna or cable – which is provided to them free by the government or private commercial television networks. Rural schools are less well equipped, but most rural teachers are likely to have access to television at home.

The Educational System

As shown in Table 5.3, Brazil has a total enrolment of over 56 million students, which represents almost 33 per cent of the total population and is the equivalent of enrolling 17.5 population age-cohorts. Basic education (eight years) is virtually universal for 7-14 year olds, and about 20 per cent of students go to rural schools. The 'excessive' school population is due to the high level of repeaters, reflecting low levels of quality due to the prevailing policies and incentives that promote expansion of the education system with little concern about quality.

Table 5.3: Enrolment in the School System

Level	Primary age target	Total enrolment
Pre-school	0-6	5,733,273
Primary school	7-14	37,267,335
Secondary school	15-17	7,769,199
Higher education	18-24	2,200,000
Adult education	Literacy and equivalence courses for adults without primary or secondary education	3,071,906
Total		56,041,713

Source: Censo da Educação (MEC/INEP, 1999) and Higher Education Census (MEC/INEP, 2000)

Teacher Education

There are over 1.8 million teachers in primary and secondary public schools, which are mostly run by both state and local (municipal) authorities. The majority of primary school teachers have either 11years of education ('pedagogic or normal school degree' required for teaching the first four grades) or 15 years of education (higher education degree in a specific discipline required for teaching grades five and above). Teachers generally graduate either from secondary-level 'normal' schools or from higher education institutions.

Teacher education faces many difficulties. Normal schools, schools of education and teacher-training institutions generally attract the least qualified students in their respective age cohorts. This is repeatedly demonstrated, for example, by the results of candidates in university entrance exams: while there are 7-21 applications per place in the most prestigious occupations such as medicine, engineering and law, making entrance more difficult and competitive, applicants for teaching seldom face more than one or two competitors.

Overall, there are more places in teacher-education colleges than candidates to fill them. Normal secondary schools are usually attractive for non-college bound students, and are considered one of the few existing upward mobility channels for black students. Salaries for teachers with 11 years of education are competitive with other salaries in most parts of the country. Salaries for teachers holding higher education degrees are 20 to 35 per cent below market rates – which may explain the academic credentials of the applicants for those schools (Oliveira, 1997; Paes de Barros, 2001). Overall, teachers do not receive a sound education, either in contents or in teaching methods. This may be a reason why teacher training is a very popular topic in education circles in Brazil.

At zero cost to teachers, demand for teacher training is virtually infinite. The prevailing logic goes like this: student achievement is low, hence let us train the teachers. Supply is abundant. Training is 'given' and training is 'received'. Federal, state and local government provide all kinds of training using direct and distance education. International financing agencies such as the World Bank give high priority to training in their projects. Universities and higher-education institutions, private profit-making and not-for-profit institutions also offer various kinds of training. Decisions regarding teacher training are usually taken centrally: an invitation, recommendation or, most often, direct command to teachers to attend a given training session is issued by the state or municipal education authority. Very few schools decide on the type of training they want for their teachers on the basis of their performance, and even fewer schools decide where to get training or whether or not to have it.

Incentives for training are usually high. Since training is usually conceived as a 'good thing to do', and in fact a 'priority', very often training is done during working hours, such that teachers and students are relieved of classes. In many cases teachers receive certificates, and in some cases those certificates may lead to higher pay.

The National School Survey, administered every two years, repeatedly confirms that over 60 per cent of teachers claim to have 'received' some kind of training during the school year (SAEB, 1997). Thus it comes as no surprise that most of the literature on teacher training in Brazil seldom presents evidence of training worth, and much less of training effectiveness or impact on student learning (Banco Mundial/UNICEF/MEC, 1997)[12].

Print- or media-based distance education is used in many teacher training programmes. There are school-equivalence programmes for teachers without a valid license – corresponding to a higher education degree. There are all sorts of short- and longer-term specialisation courses, mostly provided by higher education institutions or by the state or municipal Secretariats of Education. Foreign institutions offer graduate programmes for teachers through the Internet. The three major government educational channels – TV Educativa, TV Cultura and TV Escola – provide several types of formal and non-formal training opportunities for teachers.

The project described in this paper, A-Plus, can be classified as a programme of continuing education, but departs from existing practices in a number of important ways, which will be presented and discussed in the remainder of this paper.

Level, Purpose and Curriculum

A-Plus is a television programme aimed at educators in general – with a main, but not exclusive, focus on primary and secondary school issues. It is broadcast by Futura, a non-profit educational channel sponsored by a consortium of 14 non-governmental and private institutions. Futura broadcasts 24 hours of programmes every day, including five to six hours of new programmes and three re-runs. A-Plus is a 15-minute programme broadcast daily.

Programme Structure

A-Plus is a mixture of a news reports and in-depth documentary. The programme is led by an anchor person, normally introducing the issues in the form of questions raised by the audience. In each programme, two examples of real-life applications of the topic are shown – for example, a method of teaching literacy, strategies for conducting PTA meetings or using videos in the classroom. An education expert comments on the relevance of each example, makes provocative comments and puts forward arguments to encourage viewers to reflect on what has been presented. In the beginning of each programme, a 'technical card' is presented, summarising possible target audiences and the topic. At the end, another 'technical card' present suggestions for further activities as well as references to other sources of information on the topic.

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[12] Unfortunately, for reasons explained in the discussion section, this is also true of the project described in this paper. Finding or collecting hard data on teacher training effectiveness is a daunting task, and relating or inferring evidence of student performance on the basis of training interventions is highly controversial. Even though this should continue to be a desired goal, teacher training programmes may make sense and be justified by other reasons – as illustrated in this paper.

Twice a week the programme is complemented by two sets of commentaries – one based on relevant educational research, and the other introducing relevant literature that may help introduce the issues in the classroom, in the students' and teacher's homes and in other settings. Programmes can be presented as a series – for example, a series of programmes on using computers in schools, dealing with sex education, or the great thinkers in education – or, more usually, as individual programmes.

Programme Purpose

The purpose of the programme – and of TV-Futura programmes in general – is to help educators deal more critically and more effectively with practical matters concerning parents, children, teachers and educators in general. There is no set curriculum. There are four major stated objectives for A-Plus:

- to disseminate successful experiences and interventions as well as research results on topics of interest
- to provide support for educators – to help and stimulate them to change ideas and practices
- to answer questions presented by the audience related to practical education issues in their daily activities or school life
- to provide a new framework for the professional development of teachers.

The emphasis is on providing examples and stimuli for inspiration, not models to be rigidly copied or blindly followed.

Style and Tone of the Programmes

The style and tone of the programme is journalistic. The programme is educational, but it must be at the same time entertaining and informative. According to the programme's manager, 'when watching television, teachers do not want to see the same routine activities and language used in schools – they are looking for new ideas, new approaches, something different'. Moreover, A-Plus, as well as all other TV-Futura programmes, must follow the four main 'values' the channel is committed to – namely to develop and foster:

- community involvement, participation and development
- ethical values, actions and ideas worth implementing
- entrepreneurial attitudes by viewers – the programmes are not to be watched, they are to be used, preferably in a modified form
- pluralism – respect for diversity of views, opinions and approaches.

In general, the programmes are not meant to 'sell' specific theories, concepts or methods, but to show different approaches to solving practical problems. This is a remarkable departure from most training 'received' by teachers, which tends to be theoretical, one-sided, sectarian and highly ideological.

Another major feature of the programme is the idea of extending education beyond the school. This is done in two major ways. First, the examples or topics always tend to alert teachers to real-life situations outside the school in which they can use or apply the techniques, principles, methods or topics involved. Second, the programmes also address the audience of non-teachers, including students, showing them ways in which they can reinforce or develop activities or ideas that are relevant to schooling.

Curriculum

Decisions regarding the curriculum, or contents, of specific programmes or series are made by the programme's board of managers, and are based on four major sources of input:

- suggestions from a group of institutions (8,600 institutions as of February 2001) participating in TV-Futura's Community Mobilisation Network
- spontaneous suggestions from viewers received at the programme's call centre
- opinion surveys based on samples of call centre callers
- active, systematic analysis by the programme's education experts of educational trends and topics of interest in the literature, official documents, the Ministry of Education's agenda and professional meetings.

These inputs are analysed by the managing staff of Futura and A-Plus. Input is varied and covers all kinds of situations faced by teachers – for example, specific difficulties with the curriculum; new teaching methods; information about how other schools are dealing with drugs, violence or teenage pregnancy; literacy techniques; children's literature; choosing textbooks; homework. Teachers also like to know about theories, and what people like Paulo Freire, Piaget or Chomsky have to say to inform their practices. Given major changes in curricula and legislation, there was some interest in finding out more about legislation and its implication for schools.

Decisions on programming are generally made once a year. Production is done during a six-month period, and is organised around thematic series. On occasion, extra programmes may be produced to deal with topics of the day. Overall, however, programmes tend to reflect issues frequently mentioned by the sources of inputs listed above, and special attention is given to relevant issues for which practical examples and feasible solutions can be identified.

A-Plus is jointly produced by two teams – the journalism and education teams. These teams include their respective managers, three education specialists, plus a production team including about eight technicians and journalists. Three other people participate on a regular, but less intensive basis – the anchor person, in each programme; and the education researcher and literature expert, once a week.

Decisions about what to produce are jointly taken by the two managers, taking into consideration the annual budget and the suggestions received through the dissemination network, the call centre (both passive and active research) and the active research undertaken by the experts. Themes dealt with by other Futura programmes are excluded.

In 1999 the emphasis was split between the development of thematic series – such as media in the classroom, health education, etc. – and the discussion of the then new guidelines concerning secondary education. In 2000 the emphasis was on individual, unconnected topics. In 2001 broadcast plans anticipate a mix of both series and several specific, individual programmes focused on different topics. Overall, the curriculum of the programmes is dictated by the issues emerging from the four sources of input mentioned earlier, which reflect current concerns and practical problems that teachers deal with in their schools.

The programme does not end its mission with broadcasting. There is intensive 'after-sales' support to help make things happen. A unique feature of this – as well as the other TV-Futura programmes – is the idea that the mission of TV-Futura starts when the

broadcast ends. This means that the television programmes are meant to inform, motivate and mobilise, and induce educators to think, reflect, adapt, adopt, modify and use what they have learned.

For this to happen, TV-Futura established and leads a Community Mobilisation Network, involving schools and institutions such as hospitals, prisons and extra-curricular activity centres to explore further the uses of what they have seen on television. The needs of the audience in these centres are, in turn, reflected in the tone, focus and choice of topics for future programmes.

The Audience

Futura's target audience is educators in general: parents, social workers, nurses, providers of child care, volunteers helping children at home or in a variety of settings. To the extent that students themselves are treated as responsible for their own education, they are considered an important part of the target audience. And of course, the primary target is the teachers.

The audience consists primarily of women (70 per cent), who typically come from socio-economic levels B and C. Overall, 38.5 per cent of viewers have at least 11 years of education, and almost 50 per cent have 15 years of education. This is very similar to the profile of the teaching force, and rather different from the profile of the overall population – more than 60 per cent of the population over 15 has only four years of schooling.

Among regular Futura viewers, 26 per cent view it every day, 28 per cent occasionally during the week and 15 per cent view it 1-3 times a week. Viewers expect to participate and interact with the programmes and to get practical hints for their school activities and their daily lives.

A-Plus's audience can be broken down into several categories. We deal here with two major groups: general audience and captive (or network) audience.

General Audience

The general audience receives the television signal by pay-television. According to data provided by NET SKY, TV-Futura reaches over 40 million people in their households and over 2,000 schools and other institutions connected by cable. The cable carrying TV-Futura's signal is provided free to schools situated in areas where cable services are available. Otherwise schools may receive the signal through antenna or the satellite services provided by NET SKY, of which there were over 6.3 million subscribers in January 2001.

Futura quickly became recognised as a broadcast service throughout the country. According to a survey based on a representative sample of the national population, over 52 per cent of Brazilians have heard about TV-Futura and know what this name stands for.

The majority of viewers learned about Futura by navigating across the various channels received by cable or antenna. A significant number, 17 per cent, heard about Futura from 'spots' inserted as public service messages by the commercial Rede Globo Channel. According to audience surveys, about 13.8 million of the 40 million potential viewers watch Futura occasionally.

Several audience surveys provide information about the viewers of Futura. Overall, 78 per cent of Futura's audience watch Futura in their homes, using antenna or cable

connections, and just over 12 per cent watch it exclusively in school. A survey undertaken by Futura's call centre in December 2000 reveals that over 70 per cent of the call centre users watch Futura for educational purposes. A similar survey undertaken by the call centre in December 1999 shows that viewers tend to watch A-Plus on weekdays, rather than at weekends, and in the afternoon (4.5 per cent) and evening (33 per cent), rather than the morning.

The survey done in 2000 confirms that A-Plus is the preferred programme among Futura viewers (20 per cent), and that 56.5 per cent of A-Plus viewers watch the programme with an educational goal in mind. The major reasons for watching A-Plus declared by participants include personal development (65 per cent), lesson plans (39 per cent) and content information (14 per cent). The major uses of the programmes include using a programme to stimulate discussion in the classroom (30 per cent), using it as background material for homework or projects (26 per cent) or use as an instructional video (15 per cent). (Source: CAT, 2000.)

Overall, the data gathered in the 1999 audience survey and confirmed in the 2000 and 2001 surveys present a clear picture of the audience: mostly teachers and home-makers, primarily concerned with their own professional development and with stimuli and suggestions for their daily life at home, at school and in the community at large.

Captive Audience

The second group, the captive audience, is formed by the institutions and educators participating in the Community Mobilisation Network. In December 2000 there were over 8,600 institutions involved, 90 per cent of which were schools, and over 42,000 teachers and educators had participated in training and other mobilisation activities.

Since this is an increasing and important strategic concern of Futura and of A-Plus, it will be analysed in a subsequent section, after introducing the organisational model of Futura.

Organisational Model

If it is difficult to classify A-Plus as a continuing education programme, it is even more difficult to classify what TV-Futura is. TV-Futura – the learning channel – started its operations in September 1997 with a proposal for a new kind of television. In many aspects, it is part of a known species, which includes Public Broadcasting Service, BBC, Discovery, Kids Channel, National Geographic, educational and community television. It is similar to all of the above, but cannot be identified with any of them in particular.

TV-Futura is a concept in the making. It is journalism at the service of education. It is commercial in style but educational in content. It is privately funded, but public in its concerns. It is sponsored by a consortium, but is communitarian in its vocation. It is non profit-making, but strongly focused on results. School and school education is the focus, but not its entire scope: its scope is the educational issues of daily life in general.

In short, TV-Futura aims to develop the concept of learning cities and learning communities, and thus sees as its role to catalyse people in general, and educators in particular, to think about education. Its stated mission is to contribute in effective ways to help solve the educational problems of the majority of the population (Falcão, 1999).

As a television channel, TV-Futura defines itself by an apparent paradox, as stated by its former CEO: 'Our challenge starts after each programme is broadcast. The educational programme is effective when the student, the worker, the home-maker become empowered after working with what they saw and learned in the programmes. Programmes must generate knowledge, and knowledge must generate attitudes and competencies, which, in turn, must be tuned to the shared values of society' (Falcão, 1999). Or, as stated by current CEO Hugo Barreto: 'More than to be watched, Futura is to be used' (Barreto, 1999).

TV-Futura is a consortium formed and fully financed by 14 sponsors, including private national and multinational firms, chambers of commerce and national NGOs – all of them with a strong record of public service and social responsibility. The consortium is managed by Fundação Roberto Marinho, which, in turn, is affiliated to the GLOBO group, the major communications network in Brazil and the fourth largest in the world. Even though totally independent from both the GLOBO group and Fundação Roberto Marinho, this affiliation means that the production standards set by Futura are very high and that the channel incorporates the broadcasting experience and values of the GLOBO group and the extensive educational experience of the Fundação Roberto Marinho, particularly in the area of educational television.

The programmes produced by TV-Futura are highly professional – the Brazilian audience is used to very sophisticated visual treatment of programmes by commercial television. It operates with a full-time staff of 125 and 40-60 semi-permanent consultants, including presenters of some programmes. Its annual budget is about US$ 7.7 million.

TV-Futura offers educational programmes of varied interest, as shown in *Annex 1*. Even though the focus is always the school, there are programmes related to child education, health, public health, occupations, the job market, the environment and community development, as well as programmes to help people understand the news and make sense of what is happening in the world. In general about five hours of new programmes are produced each day. The rest of the programme consists of re-runs of older programmes.

Implementation: The Community Mobilisation Network

Consistent with the statement that Futura's mission starts when broadcast ends, the mobilisation of viewers is an integral part of the channels' activities, concerns and organisational structure.

At the time of writing, about 60 community mobilisation officers provide support to the 8,600 institutions enrolled so far throughout the country. The operations of the Network are summarised in the following paragraphs.

First, institutions must join the Network. In general they hear about it through the media, in meetings or personally. One of the incentives for joining the Network is to gain access (free connection and monthly subscription) to cable television, which includes Futura and a number of other commercial and non-commercial television channels' programmes available through cable, NET SKY or C-Band.

Next, the mobilisation officer visits the institution to identify its operations and needs. In general, institutions are interested in a large number of Futura's programmes.

Then the officer conducts a semi-structured, half-day workshop involving the educators in the institution, including permanent staff and volunteers. During the workshop the officer must achieve the following objectives:

- to motivate and sensitise the educators of the participating institutions to watch, know and make use of the channel
- to teach staff how to identify the programmes most relevant to their activities
- to teach staff to use the programmes in the context of their daily activities, modifying, enriching or just using them as sources of inspiration.

The officer returns, a couple of weeks later, to attend a demonstration performed by one or more staff members, in which they must show competence in achieving the three objectives presented above.

Finally each institution nominates a liaison person to participate in the monthly meetings of the local Network, to exchange ideas and experiences and provide feedback for production. The liaison person is expected to ensure the flow of up-to-date information between the school and Futura about the needs and wishes of his/her colleagues, as well as to ensure the adequate and creative utilisation of Futura's programmes. In the long-term this mechanism ensures membership fidelity, quality assurance regarding the use of the programmes and a permanent and privileged link with those taking decisions about future programming.

Initially, a printed magazine was distributed four times each year to all participating members of the Network, to highlight what were considered the most innovative uses and extensions of the programmes in the various contexts. This was later discontinued.

Many examples exist of how institutions and individuals use the various programmes. Some are given below.

Teachers use A-Plus to improve student literacy

At the initiative of the local partner institution, teachers from 15 rural schools in the city of Ilhéus, State of Bahia, meet once a month with the Community Mobilisation Officer to view and discuss the series on children's literacy. Students were not doing well, and teachers use the programme as a means for discussing and improving their techniques. Teachers stop viewing to raise questions or discuss relevant issues with their colleagues. Ten of the 15 teachers involved have noticed important improvements in their practices as well as improvements in student learning. One of the teachers has started her own collection of videos to use as support material in her classes.

Use of A-Plus videos help foster school–family relationships

Teachers at FEBEM – the institution responsible for re-education of at-risk minors in Ribeirão Preto, State of São Paulo – started discussing a series presented by A-Plus on school–family relations. After overcoming initial inertia and resistance to the use of videos in the classroom, teachers started to notice how these videos helped them to facilitate their communications with mostly 'problem' children and how the tapes helped them and the children to better appreciate different points of view. Videos covered both subject matter contents as well as general aspects of sexuality, violence, parenting relationships, and matters of general, practical interest to these youngsters. This initiative became a catalyst for new and improved relationships between the school and the minors' families. One of the indicators of success was that several months after the initiative started, the video-room became the best preserved and respected room.

Improving 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 transform and 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.

Integrating A-Plus in the pedagogical activities of the school

Bradesco Foundation operates 38 schools throughout Brazil, reaching about 103,000 students and over 400 teachers. Since 1999, A-Plus programmes have become integrated into the annual and recurrent pedagogical planning of the schools. In each planning period, teachers revise the A-Plus programming grid and request the video-room specialist to tape the programmes they may want to analyse. Over 200 A-Plus programmes are included in the school's current video-library, covering content and broad educational matters.

In the Bradesco school in Laguna, in the State of Santa Catarina, the most frequently used programmes are in the domains of scenic arts, chemistry in daily affairs, mathematics and games for infant education.

In the Bradesco schools, A-Plus is considered an important source of inputs and is used on a regular basis in planning and class-delivery activities.

A-Plus to support community activities

SESI is the national social service for industry. In Recife, State of Pernambuco, Erica Joyce has been using various series of A-Plus programmes to train community leaders as well as to trigger discussions in the various meetings, programmes and initiatives promoted by SESI for training educators or in direct community development interventions. Differently from schools, most of the A-Plus programmes used are those that focus on general themes – such as consumer education, education for peace, violence, sexuality, financial planning, etc. The audience includes the educators associated with SESI programmes, and has been estimated at over 12,000 each semester.

According to Joyce, one additional advantage of using A-Plus is that SESI no longer needs to hire and bring in experts – the programmes provide the expertise needed to inform participants and trigger relevant and concrete discussions.

Teachers may use the programmes as instructional aids or as stimuli for debates. A programme may inspire a local community to create new jobs or new sources of income. Social workers in a hospital were motivated to provide literacy classes to the older, illiterate patients. A programme on sanitation inspired a number of practical interventions to increase the quality of sanitisation practices and hygiene in a number of communities. Programmes on the environment mobilise school students and other community organisations to implement educational and positive actions to improve the quality of the water or the sewage system. In one case, houses were built by community projects inspired by a series teaching people how they could build low-cost, affordable houses in poor communities.

In schools, a major function performed by the Network is to teach and encourage teachers to use television as a medium of instruction. According to the verbal reports of a significant number of mobilisation officers, in spite of the familiarity with television sets and the fact that most urban schools already have television monitors, VCRs and antennae, most teachers

are not familiar with the basic operations of such equipment. Another important contribution is to show and encourage users of television to make more creative use of the programmes – and not merely using them to entertain, keep people busy or to replace the teacher. According to these reports, when television is used in institutional settings and classrooms, very often it occurs in a passive, electronic baby-sitter mode.

Sustainability

Futura is a high-risk, highly vulnerable initiative, since it relies entirely on private funding. Being an educational channel, it cannot sell advertising time. At the same time, the relatively high costs of operating the channel reduce the number of potential donors able to commit US$ 700,000+ per year over a period of five years. Increasing the number of donors may be even riskier, since it could dilute the prestige of being one of the few contributors. Besides, individual philanthropy is still basically related to donations to religious and poverty-relief causes, and corporate philanthropy is only just beginning in Brazil. Government support is not sought and is unlikely to be given, owing to the scarcity of resources and the fact that both the Federal and State governments have their own television channels. At the same time, the fact that Futura is private and does not depend on government for financing or any kind of intervention makes it attractive to a number of donors as well as to the audience.

At the time of writing, the alternative being aggressively explored by Fundação Roberto Marinho, the manager of the consortium, is to develop joint ventures to produce specific programmes or series of programmes. In 2000, such projects represented an additional production investment of US$ 1 million, and this strategy is expected to expand in the years to come.

Of course, much of the success in fundraising will always depend on the size of the audience and the ability of Futura's managers to translate that level of interest and their cause into an attractive proposal for potential donors. In a sense, the channel must create demand for its services – and secure financial support to respond to that demand. This is not different from what happens to many commercial products and social initiatives. So far, the increase in the number of viewers – from 6.9 million in 1999 to 11.1 million in 2000 (Data Folha, 1999 and 2000) – excluding viewers under 16, and the expansion of the Community Network audience can be seen as a contribution towards that end. The open broadcast, which starts in 2001, may also increase visibility and audience size, thus stimulating the interest of current and potential donors.

Technologies

A few additional words about the technologies used are warranted. The basic medium is television broadcast. The limitations so far have been the relatively limited availability of cable and antennae, but these limitations started to disappear when regular, open broadcast started in mid-2001, making Futura available virtually anywhere in Brazil. Thus Futura will become a source of broadcasting, allowing local television to rebroadcast its programmes. The initial step was taken in the State of Recife early in 2001 and reached about 50 municipalities.

Besides television programmes, there are three other important channels of communication with the audience:

- the detailed programme schedule, sent ahead of time to all institutions participating in the network
- the call centre, which is used to receive requests, complaints, comments and suggestions from the audience as well as for active audience research
- the Community Mobilisation Network.

The Community Mobilisation Network can, and should be, regarded as a technology of intervention. In fact, it is the most important part of Futura's mission – making things happen after the television set is switched off. The Network fills a number of roles. It serves to identify needs. It provides suggestions about how to use the programmes to address the relevant issues of very specific environments. It creates an environment for exchange of information and experiences among local Network members. It also serves as a feedback mechanism for production. A bi-monthly publication called Community Mobilisation highlights the most interesting uses of Futura's programmes in the various types of participating institutions.

Costs and Outcomes

The financing structure of Futura determines the financing structure of its programmes. Futura is financed by a consortium of donors. In addition, it receives funding or sponsoring for specific programmes, which amounts to about 20 per cent of total production costs. Normally, the budget for a specific programme is based on the permanent staff costs of each division or programme and the direct programme costs, and excludes indirect costs. Use of facilities for production and broadcasting, as well as indirect administrative and infrastructure costs, are typically not charged to individual programmes. The following analysis has taken this financing structure into consideration.

Costs

There are several ways to analyse and break down the costs of the programme. Cost analyses usually consider fixed and variable costs. Programme production and remakes can be seen as fixed costs; broadcasting can be seen as a variable cost. A-Plus is one of several Futura programmes. Sunk costs, capital costs and indirect administrative and operational costs could be identified and should be amortised and pro-rated over the various programmes. There are other opportunity costs such as the cost of public service inserts broadcast by TV Globo to promote Futura.

Another useful distinction would be between production and utilisation costs – utilisation would include broadcasting and field activities, such as those of the Community Mobilisation Network. Since programmes are re-run, it would be necessary to estimate the number of viewers in future years to allocate production costs over time. Costs may also be a function of the organisation in which they are incurred. As shown at the end of this section, a programme such as A-Plus could cost twice or three times as much on a similar educational channel in Brazil. A rigorous, classic cost study should disaggregate at least the major types of audience – teachers, education specialists in general and parents/adults in general – to analyse the differential impact of the programmes.

Cost studies are useful to understand and evaluate the cost-effectiveness and cost-benefit of equivalent alternatives, but may be of little use beyond that, especially when it comes to international comparisons – where cost factors such as salaries or taxes on imported

equipment may distort relative prices. Overall, 'big media', to use Wilbur Schramm's distinction, involve high front-end production costs and low utilisation, or per user, costs. A-Plus is no exception, if we take the audience as the reference for analysis. This will be the major thread of the limited cost exercises illustrated below.

Overall Production Costs of Futura

If we take Futura's annual budget of US$ 8.7 million and divide it by the total number of hours produced per year (six hours per day x 365 = 2,190 hours) the cost per programme produced is roughly US$ 4,000 per hour. This figure includes broadcasting, mobilisation and all the other direct and indirect administrative costs. It may be used as a fair estimate of how much it takes to produce sufficient programmes for Futura's scale of operation, since about the same number of new programmes are produced in different years, as are the number of re-makes and re-runs.

Overall Broadcast Costs of Futura

If we divide the same annual budget by the number of hours broadcast per year (365 x 24 = 8,670 hours), the cost per broadcast hour is US$ 1,000. This is also a fair reflection of costs: it shows how much it costs, overall, to broadcast one hour of programming, production costs included.

Production Costs of A-Plus

This is an attempt to provide a closer look at the hourly cost of one A-Plus 15-minute segment. Each year Futura produces 110 such 15-minute programmes. About 30 per cent of production is done outside the main studios, in other cities, and paid for by Futura. These costs are included in this calculation. According to the internal accounting office of Futura, the average cost of a 15-minute segment of A-Plus includes:

- direct production costs: US$ 1,750
- indirect costs: US$ 750
- travel costs: US$ 1,000 (when necessary).

The actual costs of A-Plus programmes are consistent, but lower than the average TV-Futura programme as calculated above. This may be explained by their relative simplicity in comparison to other Futura programmes.

Broadcast Costs

The direct costs of broadcast are minimal, representing less than 2 per cent of total costs, and can thus be considered as irrelevant for the practical purposes of the present exercise. Given the size of audience, the cost per viewer per programme tends to be minimal – less than a few cents per year.

Implementation Costs

This section covers only the cost of operating the Community Mobilisation Network. So far, the major cost component is salary. The breakdown is:

- annual salaries of community mobilisation staff: US$ 720,000 (average of US$ 12,000 per staff member, including salaries and local displacement costs to visit the institutions)
- unit cost per institution served per year: US$ 720,000/8,600 = US$ 84
- unit cost per teacher per year (there are about 40,000 teachers in the institutions served): US$ 720,000/40,000 = US$ 18
- unit cost per potential beneficiary per year: since the 8,600 institutions serve over 1.2 million people, the unit cost per year is US$ 720,000/1.2 million = 60 cents per year.

Cost per Viewer

The information about viewers is still limited. It varies by type of programme and mode of reception. However, if we take 7 million viewers per day and a daily transmission cost of US$ 24,000, the cost of per viewer per day is less than 10 cents. The cost per programme (such as A-Plus) would be a fraction of that.

Cost of Other Educational Television Channels

As suggested before, costs are relative to institutional contexts. They may vary even more in different countries. To illustrate the point, Table 5.4 presents the overall cost and staffing patterns of three government-funded educational television channels in Brazil with goals, production and broadcasting efforts very similar to Futura's.

Table 5.4: Annual Costs of Educational Television in Brazil

Institution	Personnel (total)	Annual budget (US$ millions)
TV-Cultura de São Paulo	1,150	62
TV-Educativa	500	8
TV-Futura	135	10

According to audience research data, TV-Futura has a larger audience and reaches more teachers than the other channels, except for TV-Cultura, created in the 1960s (Datafolha, 2000).

The nature of Futura as an open broadcast channel and the large, yet uncontrolled, number of A-Plus viewers places it in a category of technologies in which the major costs are usually production costs, which are amortised and tend to diminish drastically as audience size increases.

However, as is becoming the case with the service industry in general, and educational technology services in particular, 'after-sales' support – such as in the form of the Community Mobilisation Network – may represent increasingly relevant investments. Overall, however, the factors that determine a high cost/effectiveness ratio are a large audience, the effectiveness of the programme in helping attain important educational outcomes, and the costs of conceivable alternatives to provide this kind of career development opportunities for teachers.

Outcomes

Given what was said at the beginning of this chapter about the ineffectiveness of most teacher training initiatives, how does one justify the choice of A-Plus for analysis here, and how does one demonstrate its worth? How effective is A-Plus in promoting the continuing education of teachers? Or in the creation of learning communities of educators? Or in extending education beyond the classroom? Or in creating a new type of educational channel?

This is no easy task. The best answer is probably that no objective, non-controversial evaluation is possible, given the pervasive nature of Futura's mission, the information available and the constraints on data gathering for this specific project. Of course, it would be possible to design an experiment and collect data about the extent to which the audience in general, and teachers in particular, understand the concepts presented in the programmes. It would also be possible to evaluate how much of what is presented is used – for example, whether the books discussed in the programmes are bought or read; whether the examples shown are imitated or transformed; how the programme elicits behaviour and attitude change in the teachers and their students. None of that, however, is possible within the constraints of the present study.

We limit our case to the existing evidence and focus on the evaluation of Futura's mission and the project's four objectives stated at the beginning of this chapter.

To disseminate successful experiences and interventions as well as research results on topics of interest
One possible way to evaluate the degree of dissemination is to analyse the reach of the programme. The audience levels reached by Futura are far from insignificant in relation to the population of the country and probably in relation to the size of the teaching workforce as well – there are over 2.5 million basic education teachers in the country. In absolute numbers, Futura's potential audience represents 40 million viewers, of whom over 10 million watch Futura at least occasionally. In households served by antenna connections, 72 per cent know Futura, and 35 per cent watch it regularly – which makes it the eighth most popular of the 19 available channels.

Among the six million people served by cable, about 290,000 – close to 5 per cent – watch Futura regularly (DataFolha, 2000). Over 70 per cent of the overall population have heard about Futura and know what Futura stands for – an accomplishment few commercial products and institutions enjoy in any market, a 'dream figure' when it comes to 'social' products.

Overall, if we assume that 20 per cent of Futura's audience regularly watch A-Plus, that means about 2 million people – and we know that over 60 per cent of A-Plus viewers are teachers. In addition, it is also known that over 40,000 teachers are directly involved in the use of the programmes as a result of the efforts of the Community Mobilisation Network. One interesting question to explore is how much it would cost to reach a similar number of people using alternative delivery technologies.

To provide support for educators – to help and stimulate them to change ideas and practices
Reports from mobilisation officers suggest that the Community Mobilisation Network contributes not only to increasing the 'use' of programmes, but also to familiarising teachers

and educators with the use of video for educational purposes within and outside the classroom. After five years of widespread distribution of television sets, VCRs and antennae to schools by the Federal Government, dealing with hardware is still an obstacle to the use of videos in many schools (MEC/INEP 1998). By enabling school personnel to operate video equipment and to overcome 'techno-phobia', Futura may be also be helping to increase the use of programmes from other channels, thus increasing the overall use and effectiveness of instructional and educational media in schools.

To answer questions presented by the audience related to practical education issues in their daily activities or school life

Daily requests for tapes and printed material about the programme by institutions and schools systems provide additional evidence of the interest created by Futura's programmes. Of course these requests are relatively limited, but nonetheless act as powerful indicators of interest to guide production.

Even though there is no hard data about how much is learned and used by teachers, educators and parents, there is plenty of evidence that the programme communicates, addresses relevant needs, prompts varied action and suggests new approaches to the continuing education of teachers and to the creative use of media in education. The programme seems to respond to a legitimate need and is able to attract and maintain a faithful audience of educators in general, including a significant number of teachers, the primary target audience.

To provide a new framework for the professional development of teachers

Unlike the majority of teacher training programmes, A-Plus allows teachers to observe, discuss, probe and interact with what other teachers are doing or trying to do. In general, teacher training is confined to situations in which teachers are exposed to theories about teaching, abstract discussion about general issues, or are being directly taught. Seldom do they have the opportunity to watch and interact with their peers – a fundamental tool for the creation of a learning community (Schön, 1995; Darling-Hammond, 1997).

There are two important exceptions bearing some resemblance to A-Plus that are successful and highly appreciated by teachers. One is the time-tested programme *Salto para o Futuro* (Leaping Forward), sponsored by TV-Educativa, which presents themes and provides for organised discussion groups. The other is a video-taped programme for training teachers named Capacitar, which presents model teachers in action in the real classroom and stimulates teachers to emulate their behaviour in their own classrooms (ISCR, 1998). Thus A-Plus may contribute to create new and more effective ways to the continuing education of teachers through the use of media.

The pluralistic character of the programme is probably one of its major contributions to rethinking teacher development – particularly in Brazil, where pedagogic discussions tend to be extremely dogmatic and ideological. Burton Clark once stated that the best guarantee of the academic freedom of the United States research universities comes from the diversity of their financing. The same is true of Futura, which is financed by a diversified pool of stakeholders. The fact that Futura is run by a non-governmental, non-profit organisation and is interested in reaching the universe of teachers and educators makes it imperative that issues, problems and solutions be treated without theoretical, academic or ideological prejudices.

Various approaches, solutions and points of view are presented – as in any good, unbiased journalistic programme. This is very difficult to achieve in most teacher-training situations – where government policies, political interests or pedagogic doctrines are at stake. At the very least, A-Plus is an alternative channel for airing different views and perspectives on educational practices – a valuable asset for the development of a democratic, pluralistic society. This is even more important in a country like Brazil, where certain pedagogic ideas and orientations tend to acquire the status of a religious dogma.

A-Plus does not come at the taxpayers' expense, at least not directly. It is funded and supported by private donors – most of which are already philanthropic, tax-exempt institutions. As shown in this chapter, A-Plus costs a fraction of what public-funded competitors cost the taxpayer – and yet it reaches a broader audience. This institutional arrangement also contributes to reducing training costs – most viewing occurs outside and in addition to the educators' regular duties. The opportunity cost for the viewer is very high – it competes with other entertainment programmes, including sports and the very popular soap operas.

At the end of each day, the project must prove its worth within the channel itself, by showing appropriate levels of audience and interest, as monitored by its call centre, regular audience monitoring and regular audience surveys. And at the end of each fiscal year, the channel must prove its efficiency and effectiveness by showing its donors that society, educators and teachers value what it provides to them, and that it fills a perceived gap. The foregone analysis seems to confirm that education is too important to be left entirely to governments, educators or teachers. To do it properly, it takes a village: the global village brought about by television.

Lessons to Learn

Regarding Futura itself, and the key to ensuring the success of programmes like A-Plus, a number of lessons can be learned, which apply both to Futura and to similar projects:

- the importance of listening to the audience
- the capacity to identify relevant, concrete examples and cases
- an attractive format, compatible with the channel's personality as well as with the programmes' stated goals of taking education beyond the classroom
- adequate and stable funding
- increasingly important, the ability to offer post-programme assistance to increase customer fidelity and ensure the use of the broadcasts.

Futura and A-Plus are unique in many ways. The institutional framework and approach can hardly be copied, except in a few countries. Yet it is possible to draw some lessons and reflections that may be useful for thinking about approaches, methodologies and technologies for teacher training. Here are a few.

- First, teacher training is many things. It thus requires different methods, approaches and strategies. Pluralism and differentiation are essential to let new ideas and approaches flourish.
- Second, curricula and schools are the obvious target for teacher training efforts – including efforts concerned with lifelong education. However, as shown in this

chapter, the content and focus of training need not be exclusively limited to the classroom. Futura suggests ways to link the teacher in the classroom with the outside world and to link educators, parents and students in the outside world with the world of schooling. After all, schooling is not for itself, it is a preparation for life in the outside world.

- Third, training and professional development can only be effective if two prerequisites are met: that training is a personal responsibility and that the trainee is professionally competent. Very often – and certainly in Brazil – training or continuing education is usually considered a responsibility of the government or, more rarely, of the school. The idea that keeping oneself updated is a personal responsibility – a common currency in virtually any other profession – is foreign in the world of education. Very often – and certainly in Brazil – training is used to replace or compensate for inadequate teacher education, a goal it can never achieve. Futura's programmes are probably used by a sub-set of teachers – those better prepared, more motivated, more responsible for their own professional lives. Rather than a limitation, this is an indication of the limits within which training and professional education can be successful. There are many things that training cannot do – and it certainly cannot replace other educational policies in education, certification and hiring practices.

- Fourth, the client is the best judge of contents and worth. Different from typical government-sponsored teacher training programmes, including those using media (MEC 1998), A-Plus and most of Futura's programmes are dictated by teacher interest and feedback – not by educational authorities or bureaucrats. The most outspoken teachers – those calling Futura's call centre after the programmes – are the real curriculum decision-makers. These are also the teachers investing their own time and effort in their professional development. This may explain why approaches based on real needs assessments of people willing to pay for their decisions (investing their own time and efforts, in this case) are more likely to succeed.

- Finally, teachers in real-life situations are the best teachers. A-Plus is based on presenting, confronting and discussing teacher practices. It creates a climate where teachers watch their peers in action, compare these actions with those of other teachers and are invited to become reflective practitioners, to make up their own minds. After all, isn't that what training is all about?

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Annex 1: Programme Grid – TV Futura

TOPIC	PROGRAMMES	TARGET AUDIENCE
News/journalism	Futura News	Educators, parents
	Newsroom	Educators, youth
	Models of Community Action	Community developers
	Rural Station	
	Take action	Rural workers
		General public
Professional development of educators and teachers	A-Plus	Educators, parents
	My School	Educators, parents
Pre-school education	Teca on TV	Children
	Stop, Look, Listen	Children
	Dragon Tales	Children
	The Triplets	Children
Primary education	Hello, school-tv	Children, youth, educators
	Classic Stories	Children
	Water Fountain	General public
	Story Telling	Teachers, children

Primary and secondary education	Tom Jobim	Children, youth, educators
	Via TV	Youth, educators
	Thematic Day	Educators, general public
	Portuguese spoken here	Educators, general public
Secondary education	Dig it!?	Youth, parents, educators
	Are you there?	Youth, educators
	Cine-knowledge	Youth, educators, gen. public
	Stories of Brazil	General public
	You talk	Youth
Adult education	Telecurso 2000 – Primary	Adults, workers
	Telecurso 2000 – Secondary	Adults, workers
	Intensive Telecurso – Secondary	Adults, workers
Vocational education	Vocational Telecurso	Youth, workers
	Futura – VOCED courses	Youth, workers
	Cine-occupations	Youth, workers
Work	How to start your own business	Workers
	Little firms, big business	Workers
	To work	Workers
	Innovate to growth	Workers
	The masters	Workers
Science and technology	Archive C	Youth, educators
	GLOBO Science	Youth, educators
	Science and Technology	Youth, educators
	Living beings	Youth, educators
	Life cycles	Youth, educators
	Environment	Youth, educators
Environment	Futura – Ecology	Youth, educators
	GLOBO – Ecology	Youth, educators
	The Sea People	Educators, general public
	Energizing	Youth, educators
Health	Live well	General public
	Take care!	General public
	Healthy food	Workers, general public
	The art of healing	General public
Older people	Looking ahead	Older people, general public
Books	Tirando de Letra	Youth, educators
Citizenship	The value of citizenship	General public
	Volunteers in Action	General public

6 Egypt: Continuing Professional Development of Teachers by Videoconferencing[13]

Executive Summary

This chapter describes a programme for the continuing professional development of teachers throughout Egypt using interactive video teleconferencing (sometimes known as two-way audio video digital). The Distance Training Network was managed by the Technological Development Centre (TDC) in the Egyptian Ministry of Education.

Introduction

Education in Egypt, as in most countries, encounters the challenges of globalisation and the new information age. Barriers are eliminated by modern technology, which provides varied and unlimited sources of information. To face these challenges, a multi-faceted educational policy is required, which includes both pre-service and in-service teacher training. Both kinds of training are necessary to prepare teachers to cope with their new role, enabling them to utilise the most advanced technologies and help them understand and implement the new trends in curricula.

Table 6.1: Egypt: National Data

Egypt		
Population (millions)	66.7	
Size ('000 km^2)	1,001	
GDP per capita (purchasing power parity US$)	3,420	
Human Development Index	0.59	
Educational data	*Primary*	*Secondary*
Teaching force total '000	356,499	424,586
'000 female	176,347	163,994
Gross enrolment ratio		
All students	101	75
Female	94	70
Pupil teacher ratio	23	45

Source: UNDP, 2001; UNESCO, 2000; UNESCO, 2001; Note. Population, Size, GDP, and HDI figures are for 1999; Education figures are 1996

With the new trends of education, distance training has an important role to play. The fundamental goal of the Egyptian distance-training network is to improve teacher

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[13] Based on a national study prepared in 2001 by General Engineer Mohamed Zamzam, Director of Development Centre (TDC), Ministry of Education, Cairo – 'Distance Training of Egyptian Teachers via video conferencing technology'.

achievement by providing powerful learning opportunities for all teachers. The network allows teachers to collaborate and interact with each other in developing new concepts and expanding their knowledge. In this sense, the Egyptian experiment in distance training provides teachers with learning opportunities and incorporates different learning styles, language needs and cultural backgrounds.

This study sums up the main components of the Egyptian experiment of distance training. The study shows the structure of the network, the interrelationships within its elements and how the network is used in teacher training.

A quick look at the large numbers of teachers at all levels illustrates the need for training. It also stresses the fact that new training methods should be utilised to upgrade teachers' skills and develop their abilities, to lead them in new directions, forming links between the past, present and future and relating to all areas of the curriculum.

Rationale and Purpose of the Egypian Distance Training Network

In setting up the Egyptian network, the experiences of many different countries were taken into consideration:

- the Indonesian and Chinese use of satellites
- the experience of Morocco using interactive television
- Sri Lanka's experience in establishing distance education colleges
- Japan's use of radio in primary teacher training
- the British experience of open universities
- Hawaii's English language teaching experiences
- Pakistan's experience in providing qualified primary teachers
- Australia's experience of dealing with the problem of extended areas with low population
- raining systems and school administration in Germany.

As there is no ideal system that fits all situations, the system used in Egypt was tailored to suit Egyptian circumstances. The following elements were considered:

- the targeted number of teachers is about one million
- large numbers of female teachers cannot travel regularly to training centres
- the long absence of teachers from their schools should be avoided
- there is an urgent need to train a vast number of teachers to catch up with new technologies and new trends in curricula
- the available training centres are not enough to cover all the governorates
- the urgent need to utilise the efforts of the experts and the University professors
- the need to establish a connection between experienced trainers, educational policy-makers and teachers
- the need to contact international training institutes

Number of Teachers in all Educational Stages
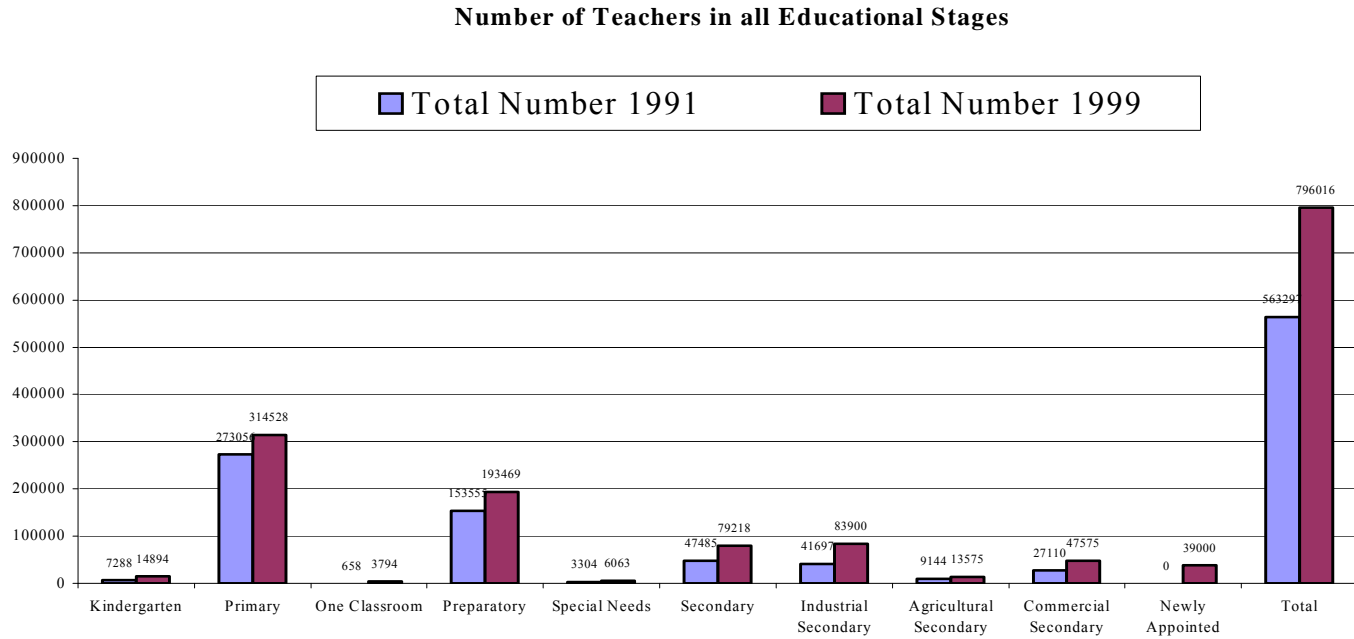
Objectives of the Network

The objectives of the Egyptian network are to:

- improve teacher performance
- familiarise teachers with modern reference and activity books
- present the latest trends in educational aids to teachers
- improve the abilities of teachers in the field of evaluation
- integrate the educational process with current events and contemporary issues
- encourage symposia to discuss the problems related to the educational process and school administration.

Structure of the National Distance Training Network

Figure 6.2: Structure of the National Distance-Training Network
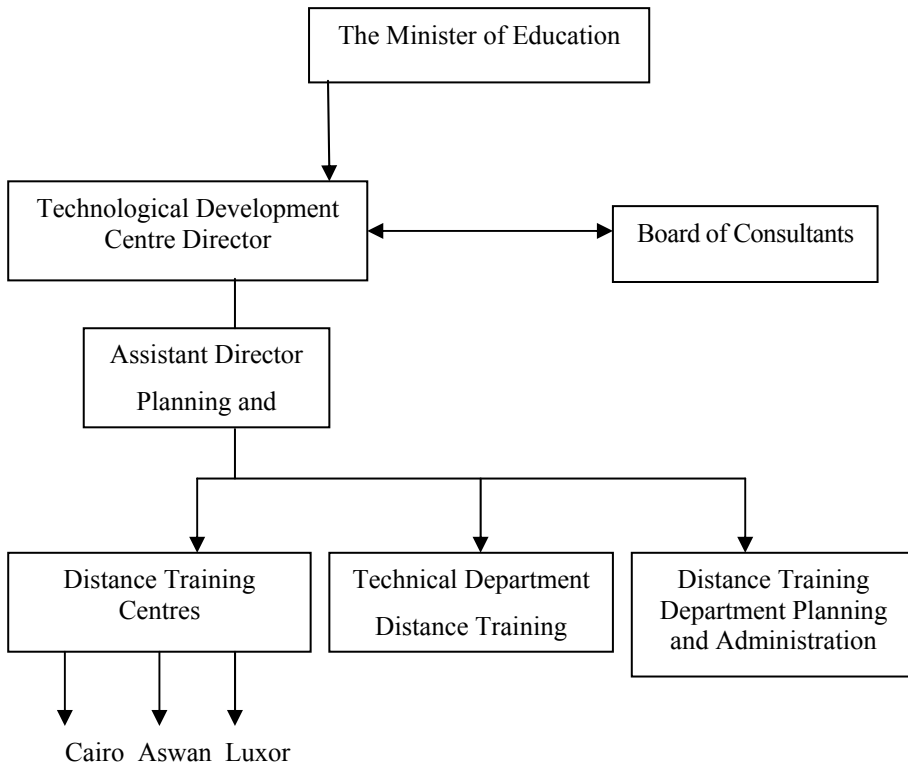
The distance-training network is headed by the TDC Director, who reports to the Minister of Education. The Assistant Director for Planning/Training:

- receives training requests and makes the necessary arrangements regarding timing and nature of the required training programmes

- ensures the readiness of the network for the next six months through the Distance Training Department
- issues a detailed training plan after it has been approved by the training higher committee and informs all concerned parties of the final plan
- liaises with all TDC departments involved in the distance-training process
- receives feedback reports and deals with any problems.

The Distance Training Department collects information about training requirements; prepares the network plan; liaises with other departments, universities and all those involved; issues instructions and makes the necessary follow-up; and prepares the required reports on distance education.

The Technical Department establishes new sites for distance training; maintains the smooth operation of the network; studies the required expansions of the network; issues operating instructions for network equipment; and prepares the mobile sites according to the network plan.

The Distance Training Centres Department distributes the network plan; issues instructions for preparing the sites for training; registers trainees according to their categories and courses completed and sends lists of trainees to the distance education department. It also manages the financial and administrative aspects of training centres; provides training centres with educational materials and publications; distributes and receives questionnaires and evaluation forms; and monitors the day-to-day running of the training centres.

Figure 6.3: The Egyptian Video-conferencing Network
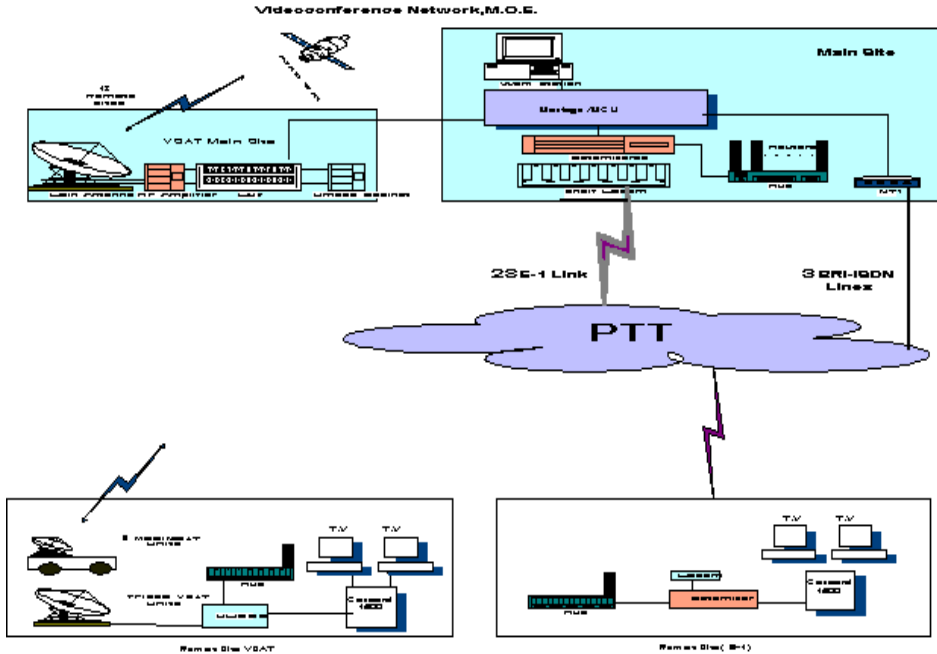
There are a total of 39 Distance Training Centres, distributed as follows:

- 22 fixed centres in governorates using high-speed channels (fibre optics)
- five fixed centres in governorates using satellite (Arab-sat 28)
- six mobile systems (satellite) to be used as needed
- six other sites, in addition to the main site at the Ministry of Education headquarters:
  - Regional Centre for Adult Education (Sirs-Layyan)
  - National Centre for Testing and Evaluation (NCTE)
  - Exploration Centre for Science and Technology (ECST)
  - Curricula Development Centre and R&D Centre
  - Heliopolis Library
  - Integrated Care Society.

Figure 6.4: Distribution of Distance-Training Centres in the Educational Directorates by the Stage of Construction of the National Network for Distance Training

Network Capacity

The network covers all governorates, and accommodates about 5,000 trainees. The working hours are nine hours daily, with a total average of 2,664 hours per year.

Figure 6.5: Hours of Training by Governorate
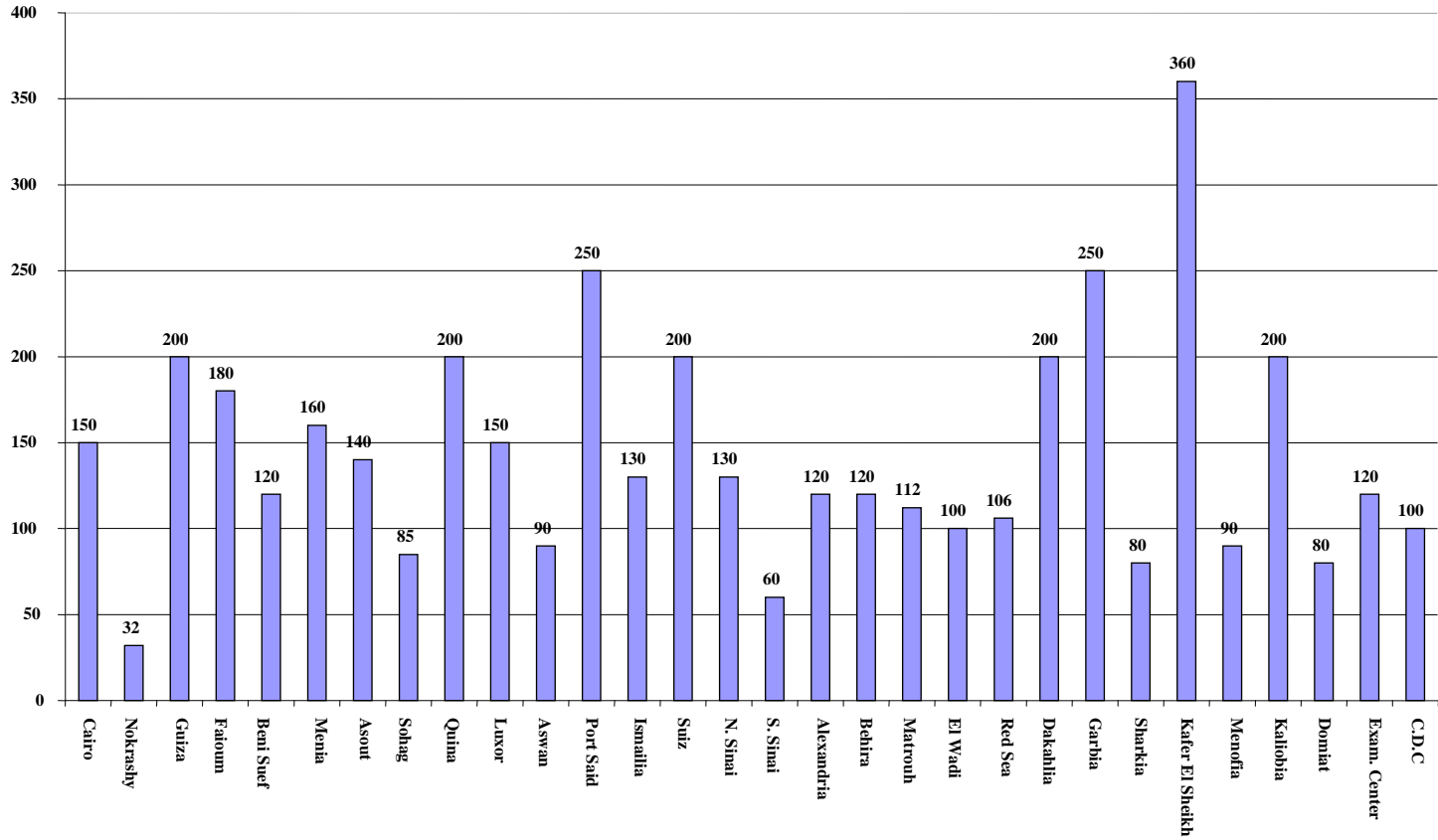
Curriculum

The following courses are conducted via the distance-training network:

- courses covering the new curricula (for all stages of education)
- English language courses, coordinating with the AUC, the BBC and the Integrated English Language Programme
- educational evaluation programmes for the NCTE
- special needs education programmes
- French language programmes, coordinating with the French cultural centre
- technical education programmes (industrial, agricultural, commercial)
- some programmes related to cultural and social subjects such as drug addiction, private tutoring issue and the role of parent-teacher associations (PTAs)
- cultural, social and special programmes in cooperation with international organisations such as UNESCO, UNICEF, The Red Cross, The Red Crescent, The World Bank and USAID
- new teacher-training programmes
- literacy and adult education programmes.

Methodology

The following are some of the basic principles that need to be followed when using the video-conferencing network:

- agree on a conceptual framework/philosophy for the programme
- define long-term and short-term objectives
- specify the target audiences and identify training requirements, taking into account different geographic environments
- ensure that the level of the programme is suitable for the target audiences
- integrate training subject matter and activities with the educational objectives
- ensure integration of theoretical and practical aspects of a programme
- use varied methods for training (discussion groups, workshops, and so on)
- select General Coordinator and trainers carefully
- prepare and distribute educational materials and publications as part of the programme
- ensure the smooth operation of communication channels and equipment
- appoint experienced facilitators for every training centre.

Planning

The following steps need to be considered when planning a distance-training programme:

- consulting all parties involved in the training as to their training requirements
- establishing priorities in light of the general training objectives and the recommendations of the higher training committee

- ensuring that the completed plan is agreed by the participants and is flexible in terms of implementation procedures
- coordinating the training plan with other training plans and unifying the curricula
- identifying the evaluators and the methods of evaluation.

Managing the Programme

When conducting a distance-training course, certain procedures should be carried out:

- establishing the relationships between all elements involved in the training
- collection of training requests (courses required, duration, training objectives)
- preparing the semi-annual plan, getting it approved and sending it to the concerned parties
- issuing instructions for the preparation of training materials
- ensuring the integration of the distance-training programme with the other training programmes in the Ministry of Education
- informing all concerned parties at least two weeks before the starting date
- collecting feedback and carrying out periodic and final evaluation of the programme.

Care must be taken to adhere to the schedule and subject matter. Distance Training Centres should be connected under the supervision of the general coordinator, facilitators and people in charge of equipment. In the first session, the General Coordinator should display the philosophy, objectives, methods of implementation, deadlines and the necessary training aids.

A democratic model that allows for discussion and interaction should be followed, and the spirit of self-tutoring should be fostered. Individual differences between trainees should be considered.

Coordination Between Different Bodies Involved in Training

For the smooth running of the programme, it is essential to ensure effective communication and coordination between research centres, the general education sector, the technical education sector (industrial, agricultural, commercial), the other assisting authorities (AUC, USAID, The French Cultural Centre) and the educational directorates.

Figure 6.6: Relationship Between Different Bodies Involved in Training

Training Comittee

Co-ordination of suggestions and requirements of training Training

Training Development Centre (TDC)

Prepaire training suggestions & requirements
Collect feed back & training

General Education Sector

Technical Education Sector

General Department of Training

Advisors of activities and educational materials

Research Centres
Assisting Authorothies
Donors

Prepare plan of network
Inform Educational Governorates – Distance Training Centre and network plan
Follow up training performance
Training organising and management

Distance Traing Centres

Prepare training halls
Receive trainees according to plan
Collect reports & questionaires

Educational Governorates

Donors	Assisting Educational Authorothies	Research Centres
1 – USAID Program 2 – World Bank	1 – AUC 2. – BBC 3 – French Cultuarl Centre 4 – German Cultuarl Centre 5 – American Cultural Centre 6 – Egyptian Universities 7 – Education enhancing programme 8 – Integrated English Language programme	1 – National Centre for Educational Research and Development 2 – National Centre for Testing and Evaluation 3 – Curriculum Development Centre

Figure 6.7: Number of Trainees up to December 2000 by Area of Work
(Total number of trainees: 575102)

General Education Supervisors 13%

General Education Head teachers 4%

One Classroom Staff 3%

Illiteracy Eradication 6%

General Education Teachers 58%

Specialists 5%

Education and Administration Managers 3%

Special Needs Staff 3%

Technical Education Teachers 5%
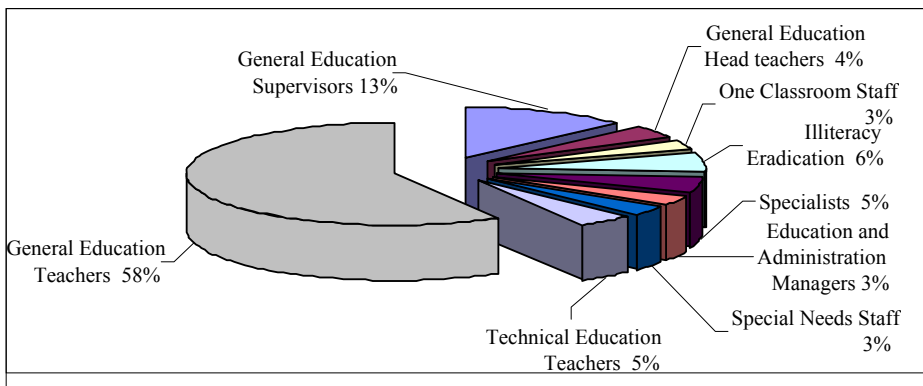
Figure 6.8: Number of Trainees up to December 2000 by Educational Stage
(Total number of trainees: 57102)

Special Needs 3%
Secondary Stage 12%
Preparatory Stage 27%
Technical Schools 5%
One Classroom Schools 3%
Illiteracy and Adult Education 6%
Kindergarten 3%
Primary Stage 41%
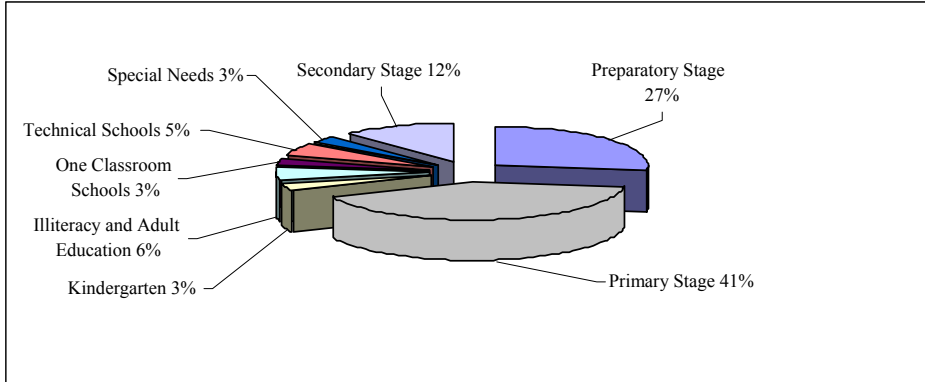
Fig 6.9: Training Hours up to December 2000
(Total training hours: 9516)

Science 6%
Network Maintenance 2%
Educational Managers 3%
Cultural and Behavioural Studies 13%
Network Specialists 4%
Philosophy and Psychology 3%
English Language 18%
Evaluation Programmes 6%
French Language 3%
Activities 8%
Arabic Language 4%
Illiteracy Eradication 3%
Kindergarten 3%
One Classroom Programmes 3%
Mathematics 6%
Technical Education 7%
Social Studies 6%
Special Needs 4%

Figure 6.10: Number of Trainees

Female — Male — Total

	New Teachers	Senior Teachers	Other	Total
Female	11104	148523	53587	213214
Male	19235	232709	109944	361888
Total	30339	381232	163531	575102

117

Scope of the Egyptian Experiment

The Egyptian experiment covered the following areas:

- English-language training
- curricula and education material
- technical education
- French-language training
- Research and Development Centre training
- The National Centre for Examinations and Education Evaluation
- supporting pre-school training programmes
- identifying and supporting talented students
- adult education and eradication of illiteracy
- special-needs education programmes
- one-classroom female teacher training.

The total number of trainees was 109, 241, with 71,279 at the primary stage and 37,962 at the preparatory stage.

Evaluation tests are held at the end of every programme. The first test was carried out from 15-24 May 1999; the second test from 22-25 July 2000; and the third test from 5-7 May 2001.

The experiment was appreciated by the USA University Continuing Education Association (UCEA). The Egyptian Minister of Education and the AUC were granted an Award of Excellence in 1999 for their efforts in the English-teaching programme. This programme was the only one outside the USA granted the award that year

Network Implementation

Curriculum

Implementation of the network involved:

- the identification of new and developed curricula in basic education, preparatory vocational education and one-classroom schools
- the introduction of Teacher's Guides and provision of the required training
- the integration of contemporary international issues into curricula (health and drug addiction, life skills, education for peace, children's rights, legal awareness, population problems, human rights, women's rights, national unity, tourism, traffic awareness, globalisation)
- the explaining of curricula through activities.

Significant elements of the curriculum included:

- new textbooks of the general primary and preparatory stages as well as vocational preparatory stages
- modern trends in community schools and one-classroom schools curricula
- modern trends in the philosophy and logic curricula of the secondary stage
- modern trends in extra-curricular activities

- technology classes
- social studies and peace issues
- utilising integrated science labs
- employing educational packages
- upgrading the performance of special-needs education schools
- fostering the talented (primary stage)
- interactive education
- extra-curricular activities as related to individual differences (primary stage)
- increasing health and environmental awareness
- using the 'talented card'.

Total number of programmes conducted was 112, covering a total of 1,596 hours. The total number of trainees was 153,464, including 2,592 leaders, 4,743 directors, 23,947 inspectors and 122,182 teachers.

Achievements included direct interaction between experts and university professors in charge of curriculum design on one hand and teachers on the other hand; deepening the values of loyalty in the age of technology and globalisation – through books and curricula; and shedding light on many contemporary issues.

Technical Education

Technical education is considered one of the main pillars of Egyptian education. It is also a main source of trained and skilled manpower for the work market. A large number of courses were conducted via the video-conferencing network to cover the field of technical education.

Objectives in the field of technical education were:
- upgrading the teaching staff working in technical education
- introducing new technologies to trainees
- upgrading the performance of commercial school staff
- providing training in new methods of producing medical and aromatic plants
- applying new methods in the areas of vegetable planting and protected agriculture
- upgrading the performance of veterinarians in production stations (farm animals and poultry)
- upgrading the performance of construction and building workers.

42 programmes were conducted, with a total of 661 training hours and 36,985 trainees. Trainees included 426 leaders, 2,237 directors, 5,725 inspectors and 36,985 teachers.

Significant courses included:
- upgrading inspectors and teachers of technical education (industrial, agricultural, commercial)
- industrial education (electronics, decoration, wood industry, advertising, cosmetics, refrigeration and air conditioning, clothing, mechanics)
- commercial education (secretarial work and administration in Arabic and English, governmental accounting, filing, correspondence, sales)

- agricultural education (poultry, farm animals, ornament plants and vegetables, crops, silkworm and honeybees).

Using the V.SAT mobile unit in the IVC system enhanced interaction and improved the level of learners.

French Language Training

The French Cultural Centre in Cairo provided various resources including educational videotapes, CDs and all kinds of aids necessary to carry out the courses.

French language training included:
• French language courses
• Egyptian French festivals
• Educational activities
• French language (round-table work)
• connecting to the French distance-training network.

15 courses were run, covering a total of 270 hours. There were a total of 10,250 trainees – two leaders, 240 directors, 1,179 inspectors and 8,829 teachers.

The courses involved interaction between French education experts and Egyptian teachers. Experiences and ideas with exchanged with French institutes through the connection with the French network. New technologies were used in learning French and some students participated with teachers in preparing training programmes.

The National Centre for Educational Research and Development

This centre is responsible for performing research and studies in different areas of education. It also connects the educational sectors with international research centres in universities. In addition, it can be considered a point of contact with international organisations interested in the field of developing education in Egypt, such as UNESCO and UNICEF.

Significant components of the programme were:
- using multi-media to present the educational material, extra curricular activities and skills
- parent-teacher association (PTA) course
- the mobile class (primary and secondary stages)
- inspector training courses (fifth year primary)
- the international Red Crescent day
- Reading for All festival
- methodology courses for large classes
- educational media design
- teacher training (basic education stage): new methods for practising activities
- analysing some negative phenomena in education (i.e. private tutoring)
- training leaders and supervisors of scout activities (basic education stage)
- the role of the psychoanalyst
- medical insurance – how to utilise the system

- international day of fighting addiction
- futuristic outlook in teaching the arts
- upgrading teachers of basic education
- teaching critical thinking
- schools without smokers
- employing physical and mathematical concepts in biology teaching
- the role of school administration in supporting peace
- using multi-media in the field of mentally handicapped education
- the contemporary school director
- a new approach to getting the hearing-impaired adjusted to their environment
- integration of science, maths and technology in general education curricula by the year 2020
- environmental planning: a school serving the environment
- slow learners in primary schools
- creativity and educational distinction
- the role of computers in the educational process
- Arabic calligraphy
- the role of school exhibitions in enhancing the skills of preparatory-stage students.

A total of 102 courses and programmes were conducted, with a total of 1,490 training hours. There were 132,881 trainees – 6,161 leaders, 14,542 directors, 132,881 inspectors and 9,267 teachers.

Achievements in this area included the participation of the World Health Organisation, the Health Insurance Authority and the Egyptian Red Crescent in courses; training a large number of targeted categories; providing teachers with research, studies and new experiences; and introducing the recommendations and achievements of international educational organisations (UNESCO, UNICEF, World Bank).

National Centre for Examinations and Education Evaluation

This centre, known as NCEEE, is in charge of testing and evaluating teacher performance as well as the educational process as a whole. It also sets quality control standards and measurements.

The main objective in this area was to develop the skills of:

- inspectors, in preparing and analysing tests
- heads of training units, in evaluating the activities
- directors of primary and preparatory schools, in the fields of quality control
- information specialists, in how to evaluate information activities
- school directors, in evaluating teacher performance
- new teachers, in the field of evaluation methods.

31 programmes were conducted, with a total of 698 hours. The total number of trainees was 41,241 – 1,530 leaders, 11,383 directors, 7,239 inspectors and 91,089 teachers.

Outcomes were:

- an enhanced educational process
- qualifying a large number of teachers and inspectors in performance evaluation
- training the heads of school training units in how to plan, develop and evaluate training programmes.

Supporting Pre-school Programmes

The pre-school stage is characterised by intelligence, activity and cheerfulness. Accordingly it is necessary to design special programmes to support children at this critical stage. It is thus important to train teachers to handle the child during this stage using new and developed methods.

The objectives in the pre-school teacher-training area were to:

- develop the skills of female teachers in handling the creativity of pre-school children
- encourage the use of puppet shows, musical activities and story-telling
- handle the psychological needs of pre-school children and examine the effect of school activities on the mental health of children
- facing the problems of pre-school children
- identify and support talented and disabled children
- introduce first aid procedures to female teachers.

Significant courses included:

- applying early childhood development programmes
- children's literature
- art, language and activities
- dealing with special-needs children
- psychological problems of pre-school children.

16 programmes were conducted, with a total of 260 hours. There were a total of 19,330 trainees – 105 leaders, 84 directors, 2,499 inspectors and 16,642 teachers.

Achievements in the pre-school area were:

- helping female teachers improve their abilities in dealing with the pre-school children
- the legislation of the comprehensive development programmes of early childhood
- increasing the ability of female pre-school teachers to use extra curricular activities
- helping female teachers to design training aids.

Identifying and Supporting Talented Students

Training objectives in this area were:

- increasing the sense of technology for basic education stage teachers
- identifying and developing talent and creativity
- presenting new programmes for talented students
- dealing with talented students and designing curricula to suit them
- identifying the basics of supporting talented students

Significant courses included:

- identifying the talented and the disabled
- supporting the talented at the primary stage
- increasing the creativity of the talented at different stages of education
- developing and directing the talented in the area of sports
- how to use the talented card.

Six programmes were conducted, with a total of 90 training hours. There were a total of 12,160 trainees – 300 leaders, 898 directors, 1,574 inspectors and 9,488 teachers.

The main achievements were:

- issuing the final documents on identifying and supporting talented students based on reaction with the teachers
- preparing a large number of teachers by the beginning of the school year 2000/2001
- mobilising all efforts to identify talented students
- running courses in parallel with other workshops.

Literacy and Adult Education

The General Authority for Literacy and Adult Education (GALAE) is in charge of the implementation of the national plan for literacy and adult education all over the country. The plan covers the 14-35 age group (obligatory). Priority is given to the poor. 90,000 classes were opened to accommodate 1.8 million students and many courses were conducted, supervised by experts and university professors.

The aims were:

- exchanging experiences among supervisors and inspectors
- identifying the technical and administrative responsibilities of supervisors and inspectors
- defining methods to be used in supervision and evaluation
- qualifying 75,262 new graduates to be literacy teachers
- introducing the most advanced methods and tools used in teaching
- integrating literacy programmes with vocational education
- developing the skills of setting up profitable small projects
- cooperation with NGOs in the eradication of illiteracy.

Courses and conferences were held on the following topics:

- instructors' course for eradication of illiteracy
- increasing the skills of staff working in this field
- different conferences related to illiteracy eradication and adult education.

31 programmes were run, with a total of 124 training hours. The total number of trainees was 51,707 – 6,891 leaders, 1,418 directors, 5,171 inspectors and 38,227 teachers.

Achievements included:

- creating a common standpoint concerning the duties and responsibilities of the general authority for literacy and adult education (GALAE)
- explaining issues related to the curricula and how they are taught to trainees
- using technology in the field of literacy and adult education
- identifying characteristics of the different environments.

Special-Needs Education Programmes

The Ministry of Education has identified the importance of special-needs education. Various programmes are being prepared by research centres.

Objectives of special-needs education programmes are:

- increasing the talent and the creativity of students with special needs
- presenting new methods of dealing with all categories of disabled students
- presenting new methods of dealing with slow learners.

Topics covered include:

- helping disabled students to deal with their circumstances and environment
- qualifying teachers
- the role of social organisations in supporting the educational process for special-needs students.

26 programmes were run, with a total of 430 training hours. There were 20,603 trainees – 1,218 directors, 202 leaders, 2,192 inspectors and 16,991 teachers.

Achievements were:

- identifying the proper educational methods to use with special-needs categories
- acquiring the skills required for interaction with these categories
- developing new teaching skills
- using newly developed media in the teaching process
- developing the professional level of social specialists and psychologists in special education schools
- implementing different activities (social, cultural, artistic, physical) to treat and correct impairments.

One-classroom Female Teacher Training

One-classroom schools were established in 1993, with a target of 3,000 schools all over the governorates, to provide education to girls aged 6-14 who couldn't join schools.

Objectives of the one-classroom teacher training were to:

- develop language and mathematics skills
- help students understand their environment and gain a basic knowledge about health
- design a flexible, comprehensive programme to fit with the various environmental circumstances
- develop the skills of managing a classroom with different levels and forms
- develop applied skills.

Significant elements of the programme included:

- English language courses for one-classroom school teachers
- female teachers/inspectors of one-classroom schools
- books and educational material for one-classroom schools.

10 programmes were run, with a total of 22 training hours and 17,869 students.

Outcomes were:

- developing the abilities of one-classroom female teachers
- boosting female education in Upper Egypt
- unifying concepts in the field of one-classroom schools
- exchanging ideas and experiences about one-classroom training.

Cost Evaluation

Table 6.2: Summary of Costs

Item	Cost (LE)
Site construction and equipment	
Construction and equipment	37,110,203
Accessories and other equipment	6,000,000
Upgrading equipment and systems	3,000,000
TOTAL	46,110,203
Annual operation cost	
Annual cost (rents, maintenance, salaries)	6,776,876
Equipment usage distributed over ten years	4,311,025
Annual total cost (including salaries and power consumption)	11,087,901
Annual total cost (excluding salaries and power consumption)	9,768,701
Distance-training cost estimate (including wages and power consumption)	
Daily cost (based on 300 operating days per year)	36,959.67
Operation cost per hour (based on 9 training hours per day)	418,663
Average cost per trainee per day (based on 150,000 students per year)	11.83
Trainee cost per hour:	2.63
Full capacity operation cost of network	
(full capacity = 5,000 trainees)	
Cost of training per day	16,150
Average trainee cost per period	3.2

Figure 6.11: Cost Comparison With Face-to-face Training
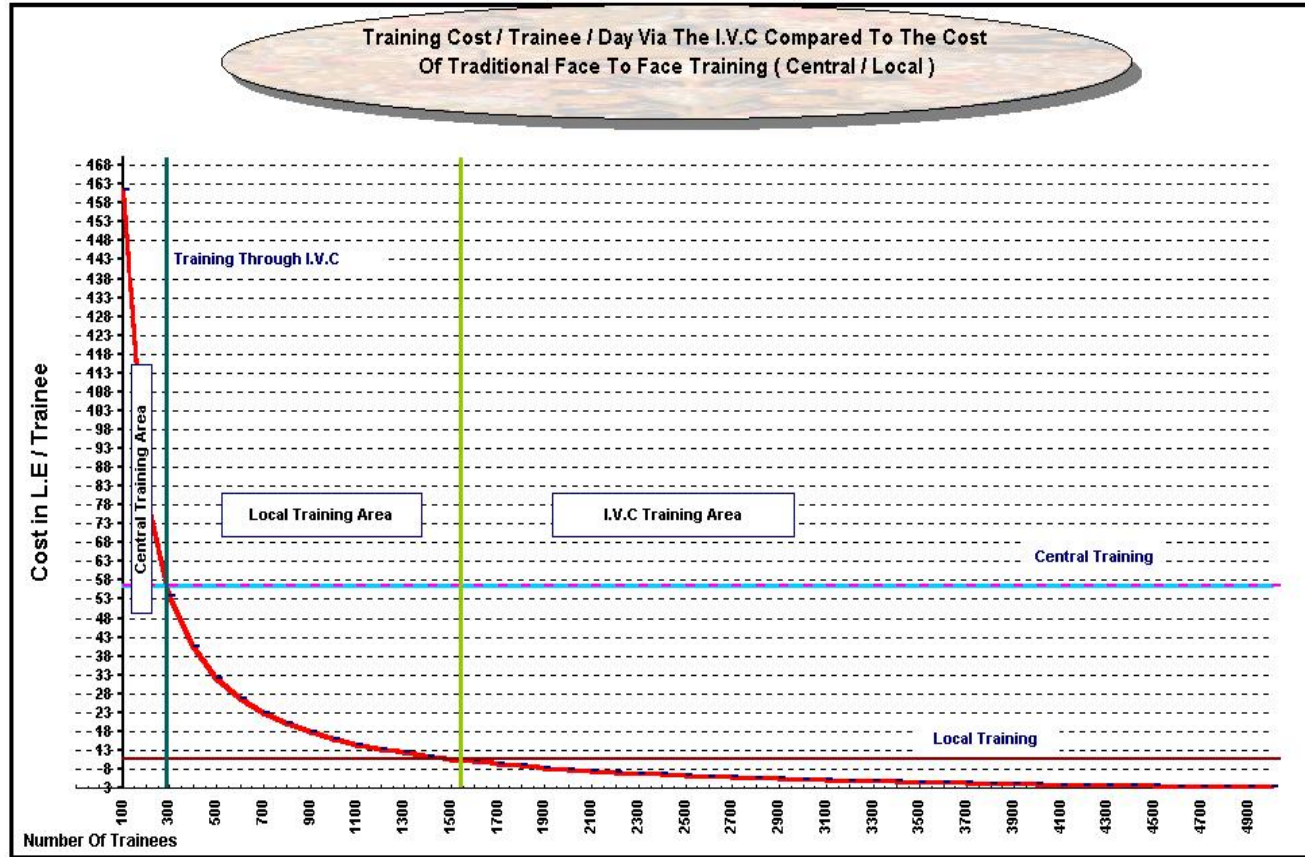
Average of travel and accommodation costs of a five-day course (face-to-face) central training: 90 LE.

Total number of trainees to cover network costs: 488,888 trainees, where 488,837 trainees were trained from October 1996 to December 1999.

With regard to the five-year training plan (face-to-face) (central and local) in 1999/2000, total number of trainees (in evaluated courses): 14,860 trainees.

Table 6.3: Face-to-face Training Costs (1999/2000)

	Local training (General Department of Training)	*Central training (Examination National Centre; Curriculum Development Centre)*
Number of trainees	10,220	4,640
Total cost as planned (LE)	186,295.00	1,324,000.00
Total cost per trainee as planned (LE)	18.23	285.34
Travel cost (LE)	24.00	53.56
Average cost per trainee (LE)	42.23	338.90
Total cost	431,590.60	1,572,496.00

Table 6.3 shows that the cost per trainee (central training) per day is 56.5 LE; and the cost per trainee (local training) per day is 10.6 LE

The study shows that:

1. Cost per trainee reaches its minimum (3.2 LE) on the network at its full capacity in all sites (5,000 trainees).
2. Distance training costs less than central face-to-face training if the number of trainees is greater than 300.
3. Distance training costs less than local face-to-face training if the number of trainees is greater than 1,600.
4. If the training is in only one place with no travel costs, then face-to-face training will cost less then distance training.

Construction and equipment costs were covered in the first three years if compared with the high costs of travelling and accommodation.

Performance Assessment

The questionnaire included numerical and statement assessment measures as well as criterion tests for the implementing authorities and questions for trainers and trainees. The questionnaire was based on the views of participants concerning the video-conference training programmes and courses.

The questionnaire was conducted on a sample of trainers and trainees of 384 programmes implemented from January 1999 to December 2000. The aim was to obtain objective views on content, presentation, evaluation and how trainees benefited from the courses, and to draw up a list of suggestions and recommendations.

The questionnaire covered:

1. pre-course procedures – pre-knowledge of time, location, content, and participants; availability of documents and handouts
2. implementation of the programme – including the different methods, participation, trainer-trainee interactivity, positive and negative aspects of implementation as well as recommendations
3. technical and technological aspects – including network equipment, competency of staff, positive and negative aspects as well as recommendations.

The questionnaire was conducted from April 1 to May 31, 2001. Both trainers and trainees were given the questionnaire. Trainers included those in:

- research centres concerned with the educational process (Curriculum Development Centre, National Centre for Educational Research and Development, National Centre for Examinations and Assessment)
- Literacy and Adult Education Centre
- offices of consultants (General and Technical Education)
- one-classroom schools, nurseries and special-needs education
- institutions cooperating with the Ministry of Education (AUC, IELP II, USIS and the French Cultural Centre)

Trainees questioned included staff working in the field of education in all governorates (teachers, supervisors, managers, specialists and administrative staff).

Findings

The network is a milestone in training all education staff as it helped in:

- ensuring stability of the educational process as trainees do not leave their governorates
- cooperation of competent instructors
- establishing curricula concepts
- reaching a wider range of trainees
- cooperation and interactivity between developmental bodies
- linking the educational community all over Egypt.

The questionnaire highlighted the importance of:

- centralised and decentralised educational leadership for follow up and supervision
- using technology
- incorporating variety into instruction to foster participation and stimulate trainees' interest
- distributing trainee guides and handouts in advance
- widening the scope of the VC network
- re-scheduling the hours, especially in the evening
- establishing audio-visual libraries in all sites
- implementing the pre-scheduled course hours to ensure stability
- integrating all training tools.

The VC network is an important medium for discussing educational problems and educational materials. The Delphi system was used for the first time on a video-conference network to investigate views on educational issues. Accordingly, the needed time was reduced from one year to 10-15 hours of transmission, a fact that facilitated the implementation of educational research. This research included:

- behavioural problems in secondary-level students
- the role of school societies in democratic education
- development of educational supervision to support gifted students (private tutoring, parents and teachers councils, students union)

Table 6.4: Trainers' Views

Item	Yes (%)	Sometimes (%)	No (%)
Cooperation with TDC	95	5	-
Training sites are highly equipped	60	40	-
Achieving training targets via VC	70	20	10
Time and hours of implementation are convenient	80	20	-
Knowledge of time in advance	65	25	10
Technical usage of VC equipment	90	10	-
Implementation of planned programmes via VC	80	15	5
Effectiveness and cooperation	70	25	5
Trainees' reaction	70	20	10

Table 6.4 shows the importance of:

- widening the scope of the VC network to reach educational departments and schools
- providing the needed equipment to record the lectures as well as establishing a visual library
- integrating modern technology tools with instruction as well as providing the needed training regarding their usage
- re-scheduling the evening sessions
- distributing the training schedule in advance
- providing supervisors and training programmes designers with incentives and rewards.

Table 6.5: Trainees' Views: Pre-course Procedures

Item	Yes (%)	Sometimes (%)	No (%)
I have known of the course prior to the implementation with a convenient time	95	5	-
The facilitator sent you handouts	70	20	10
I have known the programme goals from the facilitator in advance	70	20	10
The programme time is appropriate	60	20	20
The time of the course is convenient	70	20	10

Table 6.6: Trainees' Views: Content

Items	Yes (%)	Sometimes (%)	No (%)
The academic content is useful	80	10	10
The educational content is useful to my career	90	10	-
The content helps me realise the objectives of my material	85	15	-
The content helps me achieve the right methodology	96	4	-
The content helps me assign appropriate activities	98	2	-
The content helps me in assessment	100	-	-
The content helps me recognise contemporary issues	100	-	-
The content helps me realise new way of teaching	100	-	-

Table 6.7: Content: Positive Aspects

Items	Yes (%)	Sometimes (%)	No (%)
Realising the objectives so that the teacher is able to:	70	25	5
• use more than a form of the material	70	25	5
• use diverse teaching strategies	90	10	-
• improve his/her performance	90	10	-
Realise and face hardships	80	20	-
The content and activities of the course are integrated with the objectives	85	15	-
Programmes are linked to career (knowledge, skills, values), present and future	90	10	-
Programmes are integrated with theories and practical usage	70	30	-
Courses meet the needs of trainees	80	10	10
Courses give comprehensive experiences	65	10	20
Courses are interconnected with current and contemporary issues	90	10	-
Updates of content	80	10	10

Table 6.8: Course Content: Negative Aspects

	Yes (%)	Sometimes (%)	No (%)
Not defining the hardships that face the teacher	20	80	-
Not designating a teacher	20	80	-
No workshops are available	20	80	-

Table 6.9: Implementation Procedures

	Yes (%)	Sometimes (%)	No (%)
Using lecture mode	80	20	-
Using discussion	70	30	-
Giving practical examples	60	30	10
Using team work (more than one lecture)	40	40	20
Giving my opinion	90	20	20
Asking about problems	40	20	40

Table 6.10: Implementation: Positive Aspects

	Yes (%)	Sometimes (%)	No (%)
Using more than one strategy	80	20	-
Using the scheduled time	90	10	-
Teaching the designated subject matter	80	5	15
Designating some time for discussion	80	10	10
Coordinator is available throughout the implementation	75	20	5
Facilitators are available at sites	75[a]	26[a]	10
Dealing with individual differences	70	15	15
Participation of all sites	70	20	10

a. Some respondents answered both 'yes' and 'sometimes'.

Table 6.11: Implementation: Negative Aspects

	Yes (%)	Sometimes (%)	No (%)
Some instructors give long lectures with no discussions	20	80	-
Some instructors do not give time at the end of lectures to discussions or answering questions	20	80	-
Some instructors interact with certain sites only, disregarding the others	20	80	-
Some instructors give irrelevant lectures	20	80	-
Some instructors use only one mode of teaching	20	80	-
Some instructors do not respect time	10	90	-
Some instructors do not realise individual and cultural differences	10	90	-

Table 6.12: Technical and Technological Aspects

	Yes (%)	Sometimes (%	No (%)
Good communication among all sites	90	10	-
Good communication between main site and the other sites	95	5	-
Good visual link	95	5	-
Good audio link	85	15	-
Technology officer skilfully manages training	90	10	-
Technology officer skilfully manages problems	90	10	-

Table 6.13: Technical and Technological Aspects – Positive

	Yes (%)	Sometimes (%)	No (%)
High quality audio-visual link	90	10	-
Good communication between trainer and trainees	95	5	-
Technology specialist is available near the equipment	95	10	-

Some technical problems might happen and would take some time. This would lead to miscommunication. Give your opinion to improve distance training.

Summary and Recommendations

The network covers large numbers of trainees, inspectors and specialists. The total number of trainees from October 1996 to December 2000 reached 575,000 teachers – more than ten times the numbers targeted before – upgrading a large number of English and French teachers.

New curricula were introduced at the basic education stage and new training models were presented (active learning and identifying talented students), supporting new methods of constructive and effective learning and encouraging educational differences. The network led to increased efficiency of training in terms of utilising resources and established an effective method of communication between teachers field and educational experts and planners.

On the negative side, however, most of the lecturers still do not use new techniques of teaching through the network, but use the lecture style, concentrating on a limited number of training centres. Technical problems, such as problems with audio-visual equipment, occur in some centres. Evaluation is harder than with traditional methods of training.

Recommendations for the Future

- Address the negative aspects outlined above.
- Establish links with other Arab countries and with international universities and institutions.
- Increase the number of training sites in a way that splits and connects sites, making it possible to conduct more than one course on the network
- Use a video-streaming system to transmit courses to schools (50 schools per training site).
- Increase Internet usage.

Conclusion

The Egyptian experiment of distance teacher training adds a new dimension to the concept of teacher promotion. For more than four years, the experiment proved to be effective, especially with large numbers of teachers and specialists. The network helped in cutting down transportation and accommodation expenditure and efforts. The project has been effective mainly in English and French language training as well as in the domain of developed curricula. Moreover, one of the main roles of distance training is to support teachers in illiteracy eradication and adult education as well as in technical education and one-classroom schools. The project has also established a link between educational policy-makers and teachers.

In this respect, the Egyptian experiment was appreciated internationally. The Minister of Education and the Centre for Adult and Continuing Education – AUC – were granted an award of excellence in 1999 for their efforts in the English-teaching programme. This programme was the only one outside the USA to be granted the award that year.

Initiating such a project, Egypt has demonstrated its commitment to teachers' professional growth and development. For their part, teachers were able to enhance their professional status, improve instructional skills and strategies and gain knowledge of current developments in teaching philosophy and methodology. This will have a great impact on the educational process in every school.

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7 India: Developing Primary Teachers' Knowledge and Skills in Child Guidance

Executive Summary

This chapter describes a programme in child guidance for primary teachers, parents and social workers, provided by the Indira Gandhi National Open University (IGNOU) in India. Using printed text, audio and video materials it provides a practically-oriented non-specialist programme that is not otherwise available. The numbers of students have been relatively small (less than 1,000 per year).

Background

Table 7.1: India: National Data

Population (millions)	992.7	
Size ('000 km^2)	3,288	
GDP per capita (purchasing power parity US$)	2,248	
Human Development Index	0.571	
Educational data	*Primary*	*Secondary*
Teaching force total '000	1,789,733	–
'000 female	584,953	–
Gross enrolment ratio		
All students	100	49
Female	90	39
Pupil-teacher ratio	47	33

Source: UNDP, 2001; UNESCO, 2000; UNESCO, 2001; Note: population, size, GDP and HDI figures are for 1999; education figures are for 1996.

In July 2001, the UNESCO Director-General, Koïchiro Matsuura, aptly described the educational scenario in India: 'India has succeeded in developing a very competitive software industry, which is gaining a lot of foreign currency, but one-third of all adult Indians are still not able to read'. He expressed concerns about India's inability to reconcile its 'excellence in higher education with the need to provide basic education to its people'. He blamed the Indian government for an 'unacceptably low budgetary allocation for education at just 3.6 per cent of its GDP'. However, he also acknowledged 'Various active measures … to provide access for all children to quality primary education and to reduce differences in enrolment, drop-out and learning achievement among gender and social groups to less than five per cent and reduce the overall drop-out rates for all students to less than ten per cent'.

The UNDP report (2000) also highlights the dissonance between India's achievement of having the world's seventh largest pool of scientists and engineers alongside its astonishingly high adult illiteracy figure of 44 per cent.

In the 2001-2002 budget, government expenditure on education was about 84 billion rupees (US$ 1.8 billion), representing 2.24 per cent of total government expenditure of 3,752 billion rupees (US$ 7.9 billion). In 1994-95, expenditure on education was 3.83 per cent of GDP. With projected GDP growth of seven per cent and education growth of 10.4 per cent, expenditure on education was estimated to be 6.13 per cent in 2009-10. It was only 3.6 per cent in 2000-2001, while the declared target was six per cent.

Current expenditure on teacher education is low. It is recognised that to improve the quality of teacher education, as well as to meet the escalating requirements of teachers, a much larger budget needs to be allocated to it.

The School System

India has a 12 year (5+3+2+2) school system – eight years' elementary (five primary and three upper primary); two years' secondary and two years' senior secondary). India has an expanding school system, comprising 600,000 primary, 176,000 middle and 100,000 high/higher secondary schools; a teacher force of 4.52 million and a student strength of 180 million. The gross school enrolment ratio is 90 per cent for the 5-11 age group and 60 per cent for the14-18 age group. India has close to 59 million out-of-school children (22 per cent of school age children – the highest percentage in the world). 60 of out-of-school children are girls (UNDP, 2000).

With the total teaching force of 4.41 million, the number of teachers, their training status and teacher-pupil ratio in India in 1995-96 were as follows:

Table 7.2: Teacher-Pupil Ratios (1995-1996)

	Number of teachers (millions)	Per cent trained	Teacher-pupil ratio
Primary (I-V)	1.75	81	1:47
Upper primary (VI-VIII)	1.16	88	1:38
Secondary (IX-XII)	1.50	91	1:35

Distance Education

Distance education emerged as an alternative to the formal system, mainly due to the explosion of the younger population, with an increasing desire for education, greater accessibility, and an emphasis on Education for All. Originally devised to provide alternative avenues for the poor and the working people for higher education, it has now developed as a parallel system for primary to tertiary level, covering liberal, scientific and vocational studies. Generally, it follows the same curriculum and is recognised as equivalent to the conventional courses.

At present eight open universities and 50 distance-education institutes (directorates) attached to conventional universities offer distance-education programmes, with a total enrolment of around 700,000 learners (12 per cent of the total number of students in higher education).

Teacher Education

The country has a monolithic system of teacher education providing for education of teachers for pre-primary, primary, secondary, senior secondary and higher education. Training is conducted both face-to-face and by distance education, both pre-service and in-service. Training covers formal and non-formal schooling; special-needs education; academic and vocational education; and the full range of subject-areas. National-, state-, district- and block- level organisations exist to provide academic, practical and regulatory guidance for this system.

The National Council of Teacher Education has laid down norms and standards for recognition of teacher education programmes and institutions. These norms cover Human Resources, Physical Infrastructure, Academic Inputs and Financial Provisions. These norms are accepted and adhered to all over India and only those who complete courses conducted by the recognised institutions are eligible for jobs in schools anywhere in the country.

The general pattern of teacher education is a one-year post-graduate Bachelor of Education (BEd) course for secondary teachers; and a two-year certificate course for primary and pre-primary teachers after 12 years of school education. In 1998 there were 869 secondary teacher-education institutions, 1,173 primary and 204 pre-primary, giving a total of 2,644 teacher-education institutions. Distance-education programmes for the same degrees and certificates take twice the time of the face-to-face versions and admit only teachers who have taught for at least two years in a recognised school.

With large number of educated unemployed in the country, the teacher-education institutions do attract some bright youth. The large majority of trainees, however, are middle-rung school and university leavers. For women, teaching is even now considered the first choice among careers. All teacher-trainees do not immediately get jobs. A large number of BEd degree-holders remain unemployed for years. In the state with the highest population – Uttar Pradesh – there are about 250,000 unemployed trained secondary teachers.

Teacher Education at-a-Distance

Teacher education at-a-distance has an interesting history. With the specific objective of clearing the backlog of untrained teachers in secondary schools, time-bound correspondence courses leading to the BEd degree were started in five universities in 1966. They had the support of the All India Association of Teacher Educators (a recognised professional association representing teacher education with institutional and individual membership), the Central Government and the Planning Commission. Besides the printed material, followed by written assignments, they also had substantial face-to-face contact and supervised student-teaching in schools. The aim was to make the course comparable with the regular face-to-face courses. Soon after, a few other universities started such courses. They enrolled large numbers, conducted sub- standard programmes and thus gave cheap degrees. They became a source of huge income and got commercialised. A stage came when they produced more BEd graduates than the number from all the established universities through conventional courses. The whole teacher education system almost collapsed.

The National Council of Teacher Education (NCTE), a statutory body, was established by an Act of Parliament in 1993, with the authority and functions, among others, of regulation of teacher-education institutions and maintenance of standards, phasing out substandard and malpractising institutions. A policy decision was taken, with support

from all quarters, that correspondence courses should be stopped and secondary teachers should be trained through face-to-face courses. Later, it also permitted and laid down norms for teacher education courses by distance education for secondary and elementary schools. These courses were essentially for in-service teachers with at least two years' experience, from within the geographical jurisdiction of a university. The courses included substantial face-to-face contact as well as and use of print, video, audio, CD-ROMs and other electronic media.

Distance education now plays a very marginal role in initial pre-service teacher-education programmes (BEd and Certificate in Elementary Education). It has an annual intake of about 15,000 students, representing 0.5 per cent of the total number of teacher-education students (around 300,000). Several national and state organisations use distance education for in-service updating of teachers, for personnel in primary education performing various roles including teaching, training, development of curriculum, syllabi, textbooks, audio-visual material and so on. These are essentially continuous professional-development programmes.

At present four open universities offer distance courses for secondary and primary teachers. A few certificate- or diploma-level courses in a specific area – such as teaching of mathematics, guidance, higher education – are offered by open universities. However, many national and state-level organisations use distance education for short in-service courses in specific areas. Satellite communication, teleconferencing, radio and television are now normally used.

Level, Purpose and Curriculum

Courses offered by the IGNOU in the area of education/teacher education include PhD in Education, Master's Degree in Distance Education, Bachelor of Education (BEd), Postgraduate Diploma in Distance Education, Postgraduate Diploma in Higher Education, Diploma in Primary Education and Certificate in Guidance. The Certificate in Guidance is the subject of this case study.

Context: Child Guidance

In the 1950s, on the recommendations of the Secondary Education Commission, and under predominantly American influence, guidance and counselling were introduced into the Indian educational system. The pre-service BEd and MEd programmes included guidance in their compulsory educational psychology syllabus and also as an elective paper. Distance-education programmes for these degrees followed the same pattern. Some universities established Departments of Guidance and Counselling. Some offered diplomas in guidance and/or counselling, admitting graduates in psychology and/or education. In 1954, the Central Bureau of Educational and Vocational Guidance (CBEVG) was established by the Central Government. This was followed by 13 similar state-level bureaux in 1957. The National Council of Educational Research and Training (NCERT) and state CERTs offered in-service programmes in guidance, which was a popular theme in in-service teacher training.

The role of guidance in schools was seen as enabling maximum development of individual potential through helping young people with personal problems, choices and decisions. The guidance courses covered personal guidance, educational guidance and vocational

guidance, and aimed at developing the skills and competencies needed to provide effective guidance for young people.

Nowadays guidance is a low priority area. The state school system no longer has an active guidance service. Only a few private schools employ full- or part-time guidance specialists.

Teacher education institutions do still offer courses in guidance – at introductory level in a compulsory paper in educational psychology, and in more detail in elective papers. National and state-level in-service educational institutions continue to organise short workshops and orientation meetings. A few universities continue to offer post-graduate diplomas in guidance.

In an increasingly competitive and individualistic culture, the need for expert guidance at various levels and for various purposes is being increasingly realised. Parents like to know more about how to help their children. Teachers need to know how to guide their pupils in their personal, physical, psychological, educational and general problems. Parents and teachers are often at a loss as to what to do in different situations regarding their children. They may not understand why a child is behaving in a particular way or what is troubling the child, and themselves look for guidance from senior teachers or older family members.

Programme Origins

A few socially-sensitive academics hit on the idea of an elementary non-specialist course in guidance. Individuals directly involved in the NCERT's Postgraduate Diploma in Guidance, some parent-teacher associations and some individuals concerned with the education of minority groups got together and agreed to a programme at lower level for teachers and parents wanting to improve their child-rearing skills. After work had begun, it matured into a collaborative project between the NCERT and the IGNOU. The NCERT took responsibility for development and the IGNOU for implementation. A high-level Advisory Committee, an Expert Committee, a Committee on Programme Planning, Coordination and Implementation and a course team with functions of coordination, editing and secretariat support immediately started functioning. In one year, the NCERT completed its part: the courses, with details of instructional material, were ready. As a result of systematic hard work by dedicated top-level academics, the theoretical practical case-study based instructional materials were prepared. Before finalising, it was tested out on a large group of teachers and parents. Feedback was obtained and the materials were modified as a result. The IGNOU took over the printing and delivery of the materials prepared by them.

Purpose

The course provides in-service education for the professional development of primary teachers; continuing education for upgrading knowledge, new skills and competencies for some; and initiation of others personally interested in child development. It is extension education designed to extend knowledge and its application to the wider community.

It is an awareness and skill-based programme: awareness of the needs of the child to be guided and skills – communicative, behavioural, practical – for providing guidance. The course aimed at orienting those concerned with education and development of children below 11 years of age to perform their role better.

The course aims to enable the participants to :

- develop an understanding of child development and individual differences in the context of educational processes
- develop an understanding of the concepts and processes involved in guiding elementary school children for learning and socio-emotional development
- identify children with special needs and problems
- suggest intervention strategies for parents, teachers and other adults to facilitate the all-round development of children.

Curriculum

The Certificate in Guidance (CIG) is a six-month programme, but students are allowed to complete it over two years, taking an examination every six months. Since 1998, admissions have been held twice yearly, in January and July. The programme consists of four courses, which are divided into blocks and units as follows:

Table 7.3: Composition of the CIG Programme

Course title	No. of blocks	No. of units	Audio	Video
1. Understanding the Elementary School Child	3	2+3+3	–	0+1+2
2. Facilitating Growth and Development	2	4+4	0+1	0+1
3. Guiding Children's Learning	2	4+4	–	–
4. Guiding Socio-Emotional Development of Children	2	4+4	2+2	–
TOTAL	9	32	5	4

The CIG is a 16-credit programme and the university expects 30 hours of work per credit. Thus the total study time, including assignments and counselling sessions, amounts to 480 hours in six months, averaging 80 hours per month and about three hours per day.

Comparison with the Regular System

This is a unique programme of its type. There are no comparable programmes in the conventional system or in distance education. The short-term in-service programmes for elementary teachers do not deal with guidance except as a minor theme. The pre-service elementary teacher-education programmes include guidance as a part of their educational psychology component. Private commercial organisations offering courses like 'Tips to parents on how to bring up their children' run on very different lines.

Organisational Structure

The IGNOU is a special institution created under an Act of Parliament. It is the Apex Institution in Distance Learning. Besides itself providing distance education, it promotes, coordinates and maintains standards in distance education in India. It is also responsible for staff development in all Indian distance-education institutions. It offers 49 courses – at certificate, diploma, degree, post-graduate and PhD levels in a wide range of subjects, under its nine Schools of Studies. It runs many innovative courses not found in the conventional system

Figure 7.1: The IGNOU's Organisational Model

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                          │   VISITORS   │
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                    │  BOARD OF MANAGEMENT    │
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│ Planning Board│ │Academic      │ │Distance Education│ │Finance Commitee │
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                        │ Vice-Chancellor  │
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    │ Schools  │          │ Divisions  │        │ Centres  │
    └──────────┘          └────────────┘        └──────────┘
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Schools		Divisions		Centres
Continuing Education	Education	Administration	Academic Co-ordination	Centre for Distance Education
Computer & Information Sciences	Engineering & Technology	Computer	Campus Const. & Maintenance	
Health Sciences	Humanities	Electronic Media Production Centre	Finance & Accounts	
Management Studies	Social Sciences	Library & Documentation	Material Production & Distribution	
Sciences		Planning & Development	Regional Services	
		Student Registration & Evaluation	STRIDE	

Statutory bodies (Board of Management, Planning Board, Academic Council) are responsible for policies and programmes. The executive responsibility is exercised by its officers – Vice-Chancellor, Pro-Vice-Chancellor, Registrar and so on.

Research Capacity

All members of the School of Education possess Doctorate degrees. The School is the only School in IGNOU to have started a PhD programme by distance education. Several of the School's professors work on research committees and are associated with research in other institutions of higher education. Thus the IGNOU can claim to have good research capacity.

Responsibility for the CIG Programme

NCERT developed the CIG curriculum, content and its instructional material initially in English. It also prepared the Hindi version. It has responsibility for Development under their MOU. The primary responsibility for conducting the CIG programme rests with the School of Education, seeing it through all the stages from planning to evaluation and revision. The academic staff of the School of Education nominates one of its members as the Coordinator of the CIG programme. All further actions are taken on the Coordinator's initiative. The current Coordinator was appointed at the beginning in 1993 has been enthusiastically continuing in that position.

The functions of the various Divisions are clearly set out. The Material Production and Distribution Division takes care of printing the written material, maintaining adequate stock and dispatching it to the study centres and students according to a pre-determined schedule. The Electronic Media and Production Centre produced the audio and video material and supplies it to the study centres and to national radio and television. The Student Registration and Evaluation (SR&E) Division deals with all matters related to admissions, assignments, examinations and maintenance of student records. The Regional Services Division is responsible for administering and supervising student support services at regional centres and study centres. The Library and Documentation Division maintains a library at the Headquarters and libraries at the study centres, which stock all needed reference and supplementary material. The smooth running of the programme depends on the cooperation from Administration and the Finance and Accounts Division.

Relationships With Other Organisations and Channels of Communication

The CIG programme involves various educational institutions and academics in its planning, development and other academic functions; the Coordinator arranges and facilitates easy communication among them. There is no structured relationship with the school- or higher-education system. Individual schools contact the IGNOU to enrol teachers. The academic counsellors at the study centres are drawn from schools, colleges and universities.

The Coordinator of the CIG initiates consultations between different stake-holders. The Advisory Committee considers emerging issues and makes recommendations for consideration by other bodies. The Board of Studies of the School of Education, which meets often, considers all matters related to the programme.

Students are free to correspond with various functionaries about their problems and seek guidance. They make suggestions and comments about the programme and its

implementation in practice – such as not receiving material on time, ineffective counselling, not getting helpful feedback on their assessments, and so on. It is expected that they will be suitably dealt with, yet sometimes there is dissatisfaction. The channels of communication are generally bottom-up from the students, the study centres, the Coordinator and the School Chairman for feedback and consultations, and top-down for decision-making.

Implementation

The CIG programme was launched in 1993.

Enrolment and Composition of Student Population

The numbers of students enrolled since 1993 are shown in Table 7.4.

Table 7.4: Enrolment 1993-2001

Year	Enrolment	Year	Enrolment
1993	1,081	1998	365
1994	801	1999	635
1995	782	2000	872
1996	633	2001	861
1997	516	TOTAL	6,546

Enrolment dropped in 1998. The only difference from the other years was that this was the first time that admissions were held twice in a year. One can only guess that this might have led to some confusion and so less intake.

The target group comprises teachers (mainly primary-level), parents, social workers, personnel from voluntary agencies or any individual who is interested in understanding and guiding children. Candidates aged 18 years and over (changed last year from 21) having passed a secondary school/matriculation examination are eligible for admission. The composition of the student population is shown in Table 7.5.

Table 7.5: Composition of the Student Population, 1999-2001

	1999	*2000*	*2001*	*Total no.*	*Total %*
Total number of students	635	872	861	2,368	100
Gender					
Male	175	288	282	745	31.46
Female	460	584	579	1,623	68.53
Category[1]					
Scheduled caste	16	34	68	118	4.98
Scheduled tribe	9	13	23	45	1.90
Other backward classes	45	61	86	192	8.11
Physically handicapped	3	1	7	11	0.005
General	562	763	677	2,002	84.45

	1999	2000	2001	Total no.	Total %
Language of study					
English	430	576	549	1,555	65.67
Hindi	205	296	312	813	34.33
Area					
Urban	499	684	587	1,770	74.75
Rural	129	179	257	565	23.86
Tribal	6	7	14	27	0.011
Kashmiri	1	2	3	6	0.003
Employment status					
Employed	302	418	328	1,048	44.26
Unemployed	330	451	523	1,304	55.07
IGNOU employee	3	3	10	16	0.006
Marital status					
Married	319	467	360	1,146	48.40
Unmarried	308	394	491	1,193	50.38
Divorced	6	5	6	17	0.007
Widowed	2	6	4	12	0.005
Armed forces status[2]					
Ex-servicemen	7	5	12	24	0.01
War widows	1	2	2	5	

Notes: 1. 'Category' indicates the classification made by the government for deprived sections of society for whom affirmative action is taken – 50 per cent reservation of jobs and places in educational institutions. 2. Special provision is made for the armed force in distance education.

The course has attracted more women than men. This may be due to many primary-school teachers being female and, among parents, more mothers than fathers would have joined as looking after children is the traditional role of women. In terms of the deprived sections of society, although the course is open to all, the number of admissions is not fixed and hence there is no need for reservations. The total percentage admitted from deprived sections of society is 15.05 per cent. This is less than the percentage of reservations for them or their proportion in the total population. The reason is that most of them have not yet reached the level of high-school education. In terms of language, the programme is offered only in English and Hindi. The number of students opting for English would have been much less if the course was offered in some or all of the 15 other Indian languages.

The composition of the student population is quite satisfactory regarding rural/urban, disadvantaged groups and gender balance. It would have been useful if information on the following variables were also available: age, primary teacher/non-primary teacher, education, type of employment, categories among the unemployed.

Student Support

In order to provide individualised support to its learners, the IGNOU has developed support services as an organised activity through 55 regional centres (including 26 for the armed

forces), 633 study centres and 13 partner institutions outside India. Support services are also provided through work centres, programme-specific centres, skill-development centres and special study centres. Programmes on national radio called *Gyan-Vani* (Knowledge-sound) and the exclusive educational TV channel *Gyan-Darshan* (Knowledge-sight) supplement IGNOU distance education courses.

CIG support services are currently available in 179 IGNOU study centres in India and abroad, located in existing educational institutions. Which and how many study centres look after CIG students depends on the number of CIG students in the vicinity of a study centre. The university attaches students to their nearest study centre or opens a new study centre if need be (for other courses too). Study centres normally function during holidays and at weekends. They are equipped with a library containing books and audio- and video-cassettes. The study centre is the key place for students for collection of study materials, submission of assignments, counselling and examination.

The CIG programme includes 12 counselling sessions of two hours each, on Saturdays and Sundays during the middle three months. These are not compulsory and attendance is low. Expert counsellors/tutors with postgraduate qualifications in applied psychology or education are present at the study centres. They clarify doubts, answer questions or explain difficult concepts as needed. These sessions also provide students with an opportunity to use the library and interact with fellow participants on an informal basis. The sessions are held after particular print material has been received (and hopefully) read. The number in a counselling group depends on how many choose to attend it. It is always a small group.

Assessment

Assessment of the CIG is in two parts:

- continuous evaluation in the form of assignments, together worth 30 per cent of the final mark
- term-end examination worth 70 per cent of the final mark.

Students are required to work on two assignments per course – eight in all. There is a fixed time-schedule for submission of these assignments. Students may take the term-end examination in a course only after successfully submitting both assignments for that course.

The assignments involve observation of children in school or at home. Responses are based not on retrieving information but on its application in real field situations. For example, Assignment 1 is as follows:

> Observe a girl child belonging to the age group of 6-10 years in situations such as play, classroom, etc. Maintain a diary of her activities. Classify the observed behaviours into different aspects such as physical development, emotional development, social development, cognitive development and language development. Discuss as to how these behaviours are interrelated. Restrict your answer to about 1,000 words only.

Assignments are evaluated by university-appointed examiners – usually teacher-educators, counsellors, senior school-teachers or IGNOU School of Education faculty members.

Examinations are held twice-yearly, in June and December. The students may sit the exam in one or all the four courses, subject to successful completion of the assignments for that course.

A letter-grading system (A-E) is followed. Students must obtain at least a D grade in the assignments and the term-end examination for each course. Evidence of achievement and learning in university degree or certificate programme is traditionally believed to be provided by examinations. University regulations in this regard compel the IGNOU authorities to operate an examination procedure. One would have hoped that in a course like the CIG the need to sit examinations could be eliminated.

Evaluation and Quality Control

Distance teacher-education programmes are assessed by the Distance Education Council of the IGNOU. The Board of Studies of the School of Education occasionally takes stock of the progress of its courses. It gets feedback from students, academic counsellors, Directors of study centres, as well as evaluation of assignments and examination papers. Measures are taken to ensure the quality of the printed materials, evaluation and feedback on assignments, examination papers and grading of examination answer books. Efforts have been made to improve the delivery system and support services, which are sometimes criticised for inefficiency.

Management Information System

The study centres send annual reports to the Directors of the regional centres, the Director of Support Services, the Coordinator of the CIG programme and the School Chairman. These reports and other issues are periodically on the agenda of various bodies and officers for consideration.

Sustainability

The CIG is taken voluntarily by primary-school teachers and is not embedded in any regular teacher-education structure. It may be possible to include it in regular programmes for primary-school teachers in future. It is also offered to non-teachers – parents, social workers, persons equipped with elementary teacher-education qualifications but not employed in any school, adult learners and others interested in children aged 5-11. It is a low-cost programme in the three functional areas – development and production; maintenance of courses; and delivery systems. For example, in 1992-94, the CIG's share of the cost of development of all IGNOU programmes was 1.5 per cent; of maintenance of courses, 2 per cent; of teaching, 3.6 per cent and of delivery systems, 3.4 per cent. It is a small six-month programme out of a total of about 50 larger and longer programmes of IGNOU. In sum, its fiscal effect on the IGNOU and the Government of India responsible for the IGNOU's main funding is negligible.

Technologies

The IGNOU is equipped to use various multi-media approaches. It has facilities for audio-visual material, radio and television broadcasts, teleconferencing and interactive radio-counselling, possessing one-way video and two-way audio on its campus. Printed text, however, is the mainstay and, for most students of the CIG programme, the only

technology in use. Audio- and video-cassettes remain supplementary learning resources and are not much used.

CIG students are required to complete 32 units, which are presented in nine self-instructional printed booklets, each booklet constituting one block. Each unit includes objectives, introduction, sections (content points) and ends with 'Let us sum up', end-of-unit exercises and a glossary. At the end of each section are self-check exercises, the answers to which are at the end of the unit. The printed material is 473 pages long in English and 516 pages in the Hindi version. The booklets are posted to the students in four instalments. Information about various aspects of the course is given in a printed Programme Guide. These details are not available in any other form although an electronic version of the outline is available on Internet.

The printed materials are supplemented by five audio and four video programmes, which help clarify concepts presented in the printed units. The audio- and video-cassettes are available at the study centres and are played during the counselling sessions.

Gyan Vani and *Gyan Darshan* education channels provide educational programmes on radio and television respectively for 19 hours a day. CIG has a slot once or twice during the period of the course.

Postal correspondence is the main medium of communication between CIG students and the IGNOU. Interactive radio-counselling – live counselling on radio by invited experts, when students can ask questions by telephone – is used by IGNOU for some courses. It has not yet been tried for CIG, due to lack of initiative from the authorities and lack of demand from users.

The criteria for the use of the above technologies are affordability, ease of availability, convenience for the learners and ease of preparation on the part of IGNOU. Very few CIG students have their own telephone, let alone computers and Internet facilities; commercial cyber cafés are expensive and inconvenient. IT facilities are not available in the study centres.

Costs

The Indian government funds the IGNOU according to its needs and requirements for different courses. The CIG programme is fully funded by the IGNOU under its general income and expenditure budgets. Funding is released as and when needed. Payments for expenditure on all items are made in accordance with the usual billing, vouchers and other procedures. Allocation for different items is part of allocation of total expenditure on those items for all programmes of the IGNOU. CIG student fees go to the general pool of income, to which their contribution is very small – about US$ 7,500 per annum for 700 students.

Course Development

Development of the study materials was the responsibility of the collaborating institution, the NCERT. In 1993, the NCERT met all the expenditure for the preparation of the written material in English, including expenditure on meetings of the Advisory Committee, subject experts, their travel and accommodation expenses, secretarial assistance, meetings of

teachers for reviewing the material, editing and finalising it. The NCERT also met the costs of preparing the Hindi version.

Once NCERT had finished this task, all costs of follow-up work, such as printing, were met by the IGNOU. No exact figures of the NCERT's expenditure on the course development are available, as the expenditure was met from its general funds under different categories such as travel, special meetings, stationery, staff services and so on. However, according to the coordinators of this work, the costs are estimated to be about US$ 10,000.

Student Support

The costs of student support services are shared by all IGNOU programmes and no separate allocations are made in expenditure towards salaries of staff, correspondence and so on at Student Regulation and Evaluation Division or study centres. Full funding is available for approved items, such as marking of a certain number of assignments, conducting of a certain number of counselling sessions, and so on. Any change requires prior permission from Finance and from the appropriate authorities.

There are separate specialist counsellors/tutors for each programme. Separate figures on recurrent expenditure on them are not available, though it should be possible calculate these. A study centre prepares the total expenditure under this head for all the programmes covered by the centre.

Full Cost Breakdown

It has not been possible to get the current figures on full costs and their breakdown for the CIG programme. The Finance Division does not analyse them as a general annual practice. However, some quite satisfactory data are available for 1992-1993 and 1993-1994: the Planning and Development Division of the IGNOU made a detailed analysis of costs, efficiency and effectiveness of all the University's programmes, with a breakdown of capital and recurrent costs, fixed and variable costs, and an estimate of total and average costs (Pillai & Naidu, 1997). The costs for 1993-1994 are presented below. The costs in Indian rupees have been converted to US dollars. The exchange rate during the financial year 1993-1994 fluctuated between rupees 29.50 to 30.90. Calculations have been made here on the basis of US$ 1 = Rs30. The costs are based on the following statistics for 1993-1994

Table 7.6: CIG Programme, 1993-1994

	CIG	All IGNOU programmes
Students enrolled	801	78,365
Weighted students (different duration programmes weighted to one year)	401	71,391
Number of courses (English)	4	211
Number of courses (Hindi)	4	122
Number of credits (English)	16	1,172
Number of credits (Hindi)	16	666

Annual Cost

Annual cost has been worked out on the basis of the total expenditure incurred by the IGNOU in a particular year divided by the number of students on roll that year. The total cost for this purpose includes the following components:

- annualised cost of the design and development of the course materials
- actual cost of production and distribution of those materials for the specified number of students
- overall delivery cost (counselling, assignments, examinations, record maintenance and so on)
- overall management cost in supporting the system and its structure that year
- annualised capital cost involved in infrastructure.

There are well-known cost centres for different activities – for example, printing of study materials (Printing and Publication Division); student support (Regional Services Division) and so on.

Printed Material

Table 7.7: Distribution of Development Costs (Fixed) of CIG Printed Material – Cumulative up to 1993-1994

	Amount (US$)	% of total	% share of costs on all IGNOU programmes
Faculty salary	19,133	52.95	1.68
Support staff salary	5,833	16.14	1.76
Meetings/course writers/editors/ translation charges, etc	6,000	16.61	1.41
Designing/composing charges	5,167	14.30	1.01
TOTAL	36,133	100.00	1.58

Since printing costs are not recorded separately for each IGNOU programme, an attempt was made to apportion the cost among various programmes on the basis of a standardised block as the unit of printed text distributed to the students. In order to arrive at this unit cost, the following method was adopted:

a. The total cumulative expenditure on all printing incurred by the University from 1987-1988 to 1994-1995 was worked out.

b. The expenditure on designing and composing, separately recorded in the accounts, was worked out and deducted from the total expenditure.

c. From the net expenditure so derived, the income from the sale of publications to non-students during the same period was deducted.

d. The total number of blocks was calculated by adding the total numbers of blocks distributed to students during the period and the number of blocks in the inventory.

e. The expenditure on printing (a-b+c) was divided by the total number of blocks (d) to arrive at the cost of production of one block of material distributed to the students.

f. The production cost of printed material for CIG was worked out by the unit cost (e) multiplied by the number of blocks distributed to each student.

Cost of printing one block = (a-b+c)/d = US$ 0.358

Number of printed blocks per student = 9

Annual cost per student = US$ 3.219

The development and production costs (fixed) of printed material are as follows.

Total cost = US$ 7,700

Cost per student = US$ 9.608

Audio and Video Programmes

The major components in the production of these programmes are salaries of staff, consumables (tapes, bulbs, cables and so on), software (audio/video clipping and films) and production cost (travel, payment to presenters, panellists and so on).

Table 7.8: Costs of CIG Audio-visual Material

	Audio	*Video*
Number	5	4
Cost per programme	US$ 299.3	US$ 2,990.3
TOTAL COST	US$ 1,495.2	US$ 11,961.4

As this audio/video material was not prepared in 1993-1994, amortisation of these fixed costs into annual costs has not been done for that year. However, fixed cost can be converted into annual cost by annualisation factor a (r, n). With life expectancy (n) of six years and interest rate (r) of 7.5 per cent, the coefficient for a capital item works out to 0.213 (Jamison, Klees & Wells, 1978). Using this for 1993-1994, the annualised total cost of five audios and four videos is $ 2,866.25, giving a cost per student of US$ 3.58.

Course Maintenance

The activities involved in the maintenance of a course include minor revision and updating of materials and the preparation of student assignments. The core faculty is primarily responsible for maintenance of courses. Most faculty members would also be engaged simultaneously in the development of new courses. This makes it difficult to apportion faculty time between maintenance and developmental activities.

It may be noted that no changes have been made to the materials or the assignments.

Table 7.9: Costs of Course Maintenance, 1993-1994 (US$)

	CIG	*All IGNOU programmes*	*CIG share of total (%)*
Annual cost	4,167	206,800	2.01
Average cost per student	5.20	2.90	

The average cost per student for maintenance of CIG courses is 1.8 times greater than the average of all IGNOU programmes, while total cost of CIG course maintenance represents only 2.01 per cent of the total. Obviously the small number joining this course would be the main reason.

Development, Production and Maintenance Costs

On the basis of the costs analysed so far, the consolidated cost of development (annualised), production and maintenance of courses in 1993-1994 is as follows:

Table 7.10: CIG Development, Production and Maintenance Costs (US$)

	CIG	All IGNOU programmes	CIG share of total (%)
Total cost	14,433	17,23,367	0.84
Cost per student	18.02	24.14	

Delivery Costs

Delivery costs include teaching costs; the cost of services such as admissions, examinations, materials distribution, record maintenance; management, administration and the infrastructure essential for development and delivery.

It may be noted that the study centres, which function as the link between the University and its students in the provision of teaching/learning support, are not the IGNOU's own establishments. Certain minimum facilities are secured from a large number of host institutions located in various parts of the country on mutually agreed terms for use by IGNOU students, generally during the evenings and holidays. Employees of the host institutions also perform some management functions on a part-time basis. Academic counsellors are engaged from the host institution or outside on payment of appropriate fees. The entire study centre cost has been reckoned as teaching cost. Besides this, two-thirds of the Regional Centre cost is also apportioned to teaching cost.

Table 7.11: Pattern of Expenditure: Teaching (1993-1994)

Item	% of total
Salary of regional services: Headquarters and Regional Centres (including daily-rated staff and security) (two-thirds of total cost)	33.71
Remuneration of study-centre employees	35.78
Seminar/training/coordination/meetings	5.02
Hiring of computer time	2.33
Hiring of laboratory for science students	2.12
Counselling	20.92

The breakdown of actual expenditure on teaching under the six categories in Table 7.11 is available for all IGNOU programmes together, but not for CIG separately. It is assumed that CIG may follow a similar pattern. However, figures for the total annual cost on teaching for all university programmes as well as for CIG are available.

Table 7.12: Annual Costs of Teaching, 1993-1994 (US$)

	All IGNOU programmes	CIG	CIG share of total (%)
Annual cost of teaching	854,233	29,167	3.41
Cost per student	11.965	36.41	30.40

The teaching cost per CIG student is three times the average cost per student for all IGNOU programmes.

Table 7.13: Pattern of Expenditure: Delivery Services (1993-1994)

Item	% of total
Regional services: Headquarters and Regional Centres (one-third of total cost)	12.6
Admission	14.8
Evaluation	37.9
Computer division	12.2
Library and documentation	6.0
Materials distribution	15.8

Total expenditure for all IGNOU programmes = US$ 11,46,500
Cost per student = US$ 16.06

It has not been possible to calculate the total cost or cost on each item for CIG. Assuming that the average for CIG may be about the same as that for all the programmes:

Total expenditure on CIG = 16.06 × 401 (weighted enrolment) = US$ 6,440
Cost per CIG student = US$ 8.03

Management

Table 7.14: Pattern of Expenditure: Management (1993-1994)

Item	% of total
General administration	16.80
Estate management	7.47
Administrative expenses	64.30
Miscellaneous expenditure	11.42

Total expenditure for all IGNOU programmes = US$ 18,99,833
Cost per student = US$ 26.61

Assuming the same for CIG:
Total expenditure on CIG = 26.61 × 401 (weighted enrolment) = US$ 10,671
Cost per CIG student = US$ 13.32

Table 7.15: Total Delivery Costs, 1993-1994 (US$)

	All IGNOU programmes	CIG
Teaching	8,54,233	29,164
Other services	11,46,500	6,440
Management	18,99,833	10,671
TOTAL	39,00,567	46,275
Cost per student	54.64	57.77

Capital Cost

This includes expenditure on:
- land and buildings
- furniture, equipment, vehicles, computers and library books.

Total annualised cost (for all IGNOU programmes) = US$ 15,10,267
Cost per student = US$ 21.15

Annual Cost per Student

On the basis of the analysis done so far, the consolidated total cost per student is as follows:

Table 7.16: Cost per Student: All IGNOU Programmes (1993-1994)

Item	US$
Development and production of materials (print, audio, video) and maintenance of courses	24.14
Teaching	11.97
Other delivery services	16.03
Management	26.61
TOTAL	78.75

Attempting the same for the CIG programme we get the consolidated total and per student cost as follows:

Table 7.17: Consolidated Costs: CIG (1993-1994)

Item	Total (US$)	Cost per student (US$)
Development and production of materials (print – no audio/video in 1993-1994) and maintenance of courses	14,433	18.02
Teaching	29,164	36.41
Other delivery services	6,440	8.03
Management	10,671	13.32
TOTAL	60,708	75.78

These are the costs for 1993-1994. It is assumed that, in US dollars, they would be almost the same today: 4-6 per cent annual inflation, giving about 50 per cent increase in expenditure would be balanced by the increased value of the US dollars against Indian currency in the same ratio.

It has not been possible to calculate cost per successful student in 1993-1994. The course started in 1993 and no students completed that year.

Comparative Costs

There are no programmes comparable with CIG in the university or school sector. However, we may compare the total cost per student for all IGNOU programmes (US$ 78.75 – see Table 7.16) with the cost per student in conventional universities.

Table 7.18: Cost per Student in Conventional Universities, 1993-1994

State	Cost per student (US$)
Jammu and Kashmir	210.23
Madhya Pradesh	122.23
Orissa	219.63
Goa	114.53
Pondicherry	398.43
Tamil Nadu	234.23
Delhi	210.76
Average cost	205.20

In the postgraduate diploma course conducted by the NCERT in its four Regional Institutes of Education, with 25 seats in each, the estimated expenditure for 2000-2001 is US$ 2,931 (with exchange rate of US$ 1= Rs 47). This does not include the cost of the services of the regular staff. It includes the honorarium of 20 guest lectures. 17 students were admitted (while there were 25 seats available), only 15 successfully completed. The cost of the course (total US$ 29,319) works out to US$ 1,954.6 per student enrolled and US$ 2,255.3 per successful student. The cost would be much higher if the cost of staff and other institutional were added. The same would have been the position in 1993-1994.

Students' Personal Costs

Fees charged by the IGNOU for the CIG programme have been the same since its inception: Rs500/-) which is equivalent to US$ 16.67 in 1993-1994 and US$ 10.64 at the current exchange rate of Rs 47/- to US$ 1. The maximum amount that students would spend on other items – postage, stationery, travel to study centres, phone calls – may be about the same, US$ 10.64. This amount will be spent only by those who submit assignments and attend optional counselling sessions. There is no lost income for students as they learn in their own time, without taking any leave or loss of wages. Thus the total cost to the students for the whole programme would currently be about US$ 21.28.

For the NCERT's post graduate diploma course, the fees are double those of the CIG – $ 21.28. In addition, their expenses for attending the face-to-face course for nine months will be quite high – accommodation, travel, lost income (if the employed come on leave without salary).

Use of Resources

The costs of development, production and maintenance of print material are quite rationally used. There is scope for better use in delivery and support services: resources could be used more efficiently if the support services are fully utilised. At the counselling sessions, counsellors always need to be paid, even if few or no attend. Obviously, if more students are present, the utilisation of all resources is proportionately better. Minimal use of audio- and video-cassettes also means insufficient return of the investment.

If the visits of students to study centres could be ensured, the costs for postage of materials could be minimised, as students could collect materials in person. To reduce costs, students therefore need to be encouraged to use the study centres.

Sustainability

The CIG programme is not sustained by any outside maintenance contracts. Though the IGNOU collaborated with NCERT for development of the study materials, review and revision is now a normal function of the School of Education. Any expenditure on experts for this purpose will be easily met from the IGNOU allocations for the programme. It can be stated with confidence that there are no concerns as to the financial sustainability of the programme.

General

A few points need to be clarified with regard to the costs. The above analysis is for 1993-1994; no other cost analysis has been made and no data for the CIG alone are available. Many cost elements are common to all IGOU programmes. At study centres, a CIG counsellor is engaged and paid an honorarium for each counselling session,

regardless of the number of students attending. The administrative and other costs of the centre are shared by several programmes. The Regional Centres, under which the study centres work, are IGNOU establishments, while the study centres are not.

Outcomes

The NCERT and the IGNOU authorities and academic staff consider that the CIG is a good programme, though they are not happy with the low enrolment and completion rates. They consider that the CIG serves a useful social purpose, that the curriculum, syllabus and assignments are excellent, and that printed materials are of good quality.

A survey of students was carried out by the CIG Coordinator in 1999. A questionnaire was mailed to 225 students. 54 responded – 22 males and 32 females. It was notable that although high-school education is the required qualification for the programme, 50 of the 54 respondents were graduates and post graduates. (Many Indian primary-school teachers are graduates). Most of them had completed a teacher-education course. Most expressed satisfaction with the CIG. Some were dissatisfied due to the CIG not giving them any benefit in their job. Also, one respondent commented 'not achieved due to unfair practice at the study centre'. The respondents also suggested the programme should be in all regional languages. They found the print material appropriate and adequate.

Appropriateness

The purpose of the CIG programme is to equip teachers, parents and social workers to help better development of children. One of the main issues to emerge from the study is whether the CIG should be a non-credit programme. The assessment system is geared to written examinations. Asking students to do compulsorily practical work, report it in written assignments and sit written examinations may not be appropriate. The examination papers are knowledge-based with essay-type and short-answer questions. There are no objective-type questions.

Distance education began with the objective of providing education to those who missed it on conventional education or cannot follow conventional courses due to many factors, including age, employment, economic conditions and remote habitation. Many distance students are not seeking degrees or certificates. They would probably be happy with a simple testimonial stating that they have pursued the course.

Accessibility

As shown in Table 7.5, the CIG programme is accessible to various sub-groups. It is an elementary programme and is more for self-enrichment than for vocational training. The students enrol with a view to acquiring skills in child guidance in order to perform better as parents or teachers. The intake of female students – teachers, housewives or social workers – is quite satisfactory. Access for women to the CIG programme is better than access for girls to school education in the conventional system.

No special effort is made to publicise the course. A routine announcement in the newspapers is given regarding admissions, along with many other IGNOU courses. Schools are not directly contacted.

Delivery Services

Printed materials are dispatched by post or collected by students from the study centres. The postal services have the reputation of being quite efficient and reach the rural, or isolated hilly or tribal areas. The audio- and video-cassettes are played only at the study centres, thus covering only those who visit them for counselling sessions. They are also presented, though very infrequently, on the national radio and television on pre-announced dates.

Level

The basic medium of instruction in the CIG is the printed booklets. They look easy, but the content may prove too difficult for the target group. It requires sustained reading and regular hard work. The CIG is a 16-credit course. The IGNOU considers each credit equivalent to 30 hours of student study. Thus, a student has to study for 480 hours. As it is a six-month course, this means 80 hours 'study per month and three hours per day – probably too much to expect from busy housewives and working teachers.

Bearing in mind the level of the CIG learners, the assignments and examination are quite demanding, requiring discipline and persistence.

Language of Instruction

The programme is offered only in English (since 1993) and Hindi (since 1994), which are the official languages of the government of India. The states in India are mainly organised on linguistic basis. Hindi is the official and the people's language in only eight of the 27 states. These states cover almost half of India in area and population. Though Hindi is understood in most parts of India, most people with a high-school education (the qualification required for CIG admission) in non-Hindi areas would not have adequate proficiency in Hindi to take the course. Their level of English would be the same. The medium of instruction in primary schools is the regional language and that is the language the primary school teachers and parents know. The use of English and Hindi only for the CIG programme effectively excludes disadvantaged, rural and tribal people in non-Hindi regions who do not know Hindi or English at all. Users of the 15 other regional languages cannot take advantage of the CIG course.

Affordability

The fees for the CIG programme are Rs 500 (US$ 10.64). This is easily affordable for employed teachers or middle-class mothers. (The annual salary of a primary teacher is about US$ 1,800.) Unemployed people or mothers from poorer households may have some difficulty paying the fees.

Effectiveness

The completion rate of the CIG programme is extremely low, as shown in Table 7.19.

Table 7.19: CIG Admissions and Completion rates, 1993-2001

Year	Number admitted	Certificates awarded
1993	1,081	–
1994	801	–
1995	782	113
1996	633	109
1997	516	149
1998	365	148
1999	635	99
2000	872	94
2001	861	175
TOTAL	6,546	887

The table does not give corresponding figures for a particular year, since students may take from six months to two years to complete the programme, submitting eight assignments and taking examinations in four courses as when they choose. Leaving out the 2001 students, whose completion figures are not included above, the total number of students admitted from 1993-2000 is 5,659 and the number completing the course is 887. A few of the 2000 entrants may complete in 2001 or 2002, but the picture will not change very much. Thus only about one-seventh of those admitted complete the course.

Many of the students who put apply for the examination do not appear, and among those who appear, some do not succeed, though the success rate is fairly high. Table 7.20 gives data for the December 1999 examination.

Table 7.20: Results of the Term-end Examination, December 1999

Applied		Appeared				Completed			
Courses	Students	Courses		Students		Courses		Students	
		no.	%	no.	%	no.	%	no.	%
641	137	340	53.04	103	75.18	319	93.82	93	90.29

The CIG has four courses. Results for each course are given below

Table 7.21: Results of the Term-end Examination (Individual Courses), December 1999

Course	Applied	Appeared (no.)	Appeared (%)	Completed (no.)	Completed (%)
ES-101	163	85	52.15	79	92.94
ES-102	163	82	50.31	81	98.78
ES-103	177	91	51.41	79	86.81
ES-104	138	82	59.42	80	97.56

Quality

A number of issues to do with quality emerged from the study.

Support System

The study highlighted the lack of an effective support system. The students complain of non-response to their letters. The counselling sessions are not held as scheduled. There is no mechanism to check receipt of assignments. Their evaluation and feedback is not as prompt as it should be. Although completion of the assignments is compulsory before taking the term-end examinations, it is possible for some to take the examination without having submitted the related assignments.

The following information relating to a Regional Centre in Delhi with four CIG study centres may be considered typical of the study centres. The total students admitted to these four centres in the recent sessions are January 2000 – 19; July 2000 – 16; January 2001 – 96; July 2001 – 35.

Table 7.22: Regional Centre – Delhi II: Student Data, 2001 Batch

Study centre	No. of students admitted	Counselling sessions	Total attendance	Average students per session	No. of assignments submitted
1	36	4	17	4.25	15
2	9	7	n/a	–	n/a
3	14	8	85	10.63	n/a
4	37	5	16	3.2	n/a

(n/a – not available)

The scheduled number of counselling sessions in each centre is 12 for the six-month session. No centre has organised that many and in those organised, attendance generally low. The numbers of students registered at the Regional Centre at Bhubneswar (a large city, capital of Orissa state) are 1996 – 26; 1997 – 27; 1998 – 11; 1999 – 24; 2000 – 32 and July 2001 – 19. There are four study centres, which held a total of 15 counselling sessions. The expected number of assignments has never been received.

The reasons highlighted by those who did not attend counselling sessions were:

- 'the sessions are not organised'
- distance of the study centres from students' homes and lack of transport
- inconvenient times: 'Saturday is not a holiday in school'
- 'counsellors not helpful, come without preparation, lack content expertise'
- 'video shown was not helpful'.

Students considered the libraries in the study centres to be poor, but also said that the library is not needed as IGNOU material is sufficient.

One student commented that 'monitoring of study centres by IGNOU officials is a must to know the difficulties faced by the students'.

The Programme Guide, which includes dates for submission of assignments, counselling sessions and examinations, is given to the students as soon as they join. Thereafter, there is no monitoring, no reminders, in fact no communication with the students.

There is need for constant monitoring of students in terms of submission of assignments, attendance at counselling sessions, difficulties encountered, and so on. At present no such system is in place.

Delivery of Course Material

One third of students said that they did not receive the material on time. They suggested that arrangements should be made for collecting the material from study centres instead of waiting for postal delivery from the IGNOU.

Assessment

One observation recorded is that the assignment submission schedule could be more flexible and that the study centres should decide it. Other observations were that assignments should be evaluated promptly, and samples of model assignments could be provided.

Learning Material

As a testimonial to the quality of the printed material, the researcher found that (i) it has been appreciated at certain international seminars where it was presented to American and British educationalist (ii) there are purchases of the material by schools and individuals who have not joined as students.

The material was developed by a team of eminent experts in psychology and education, associated with different high-level institutions in India. The purpose it was to serve was always kept in mind and efforts were made to tailor the materials to the level of the target group. There are plenty of illustrations and frequent opportunities for review.

However, various issues emerged relating to the appropriateness of the materials. The first two courses are theoretical; the last two are more practical with plenty of case studies. The students find the theoretical courses easy to read but difficult to grasp and retain. The experts decided that jargon and technical language would be avoided and concepts would be explained in simple terms. However, references to Piaget, Havighurst and so on have crept in, which could have been avoided.

More importantly, the materials have completely ignored any consideration of the cultural context. Every society and culture has its traditional ways of child-rearing. These are very well documented and the experts writing the content are knowledgeable about them. There are practices learnt from parents and grandparents down the generations. They include many beliefs, not accepted by modern reasoning and knowledge. A course meant for guidance in development of children 0-11 would have done well to consider these and to argue for or against them in the light of the findings of psychologists and experts. If the indigenous knowledge and practices on child development had been used as the base material, the content would have been more relevant and interesting. The rich, traditional, culture-based norms of teachers and parents, inherited from generation to generation, the way children are brought up in Indian joint and extended families, the practices in different social groups like castes, classes and the stereotype gender roles should have found a place in the course materials.

An expert in child guidance gave the following opinion about the materials. 'The contents are written very well, give a good reading to the students. The subject matter is more than needed. However, but for the first booklet, it seems to be a course on child psychology. The contents should have been more guidance-oriented. It is too much for the elementary school teachers. It needs to be reviewed and made attractive for them. Only that content be given that is needed and accepted by them with their low qualifications. They should be able to understand it as self-study material. They should find it within their reach and worthwhile.'

Impact

Asked about what impact the CIG had on their day-to-day dealings with children, some students' responses were:

- 'Very useful in dealing with our children, students and teachers'
- 'Has increased my interpersonal effectiveness'
- 'Helped me to be creative in the classroom and make the classes more interesting'
- 'Improved my understanding of children'
- 'Have applied in my day-to-day life in the family'.

It appears that those who have seriously studied and successfully completed the course find some changes in their reactions to the children's problems. They are more patient and understanding and their knowledge of the growth and development of children has increased. Their expectations of child behaviour are realistic.

Some housewives stated that they have benefited from reading the course material, although they did not submit assignments and take examinations. In looking after their children, they successfully practise what they have read. Some have felt enriched in their personal life – more satisfaction in their relations with their children, more harmony within the family, higher self-esteem, self-confidence and better quality of life.

Acceptability

IGNOU degrees, diplomas and certificates are recognised by all the members of the Association of Indian Universities (AIU) and are equivalent to degrees, diplomas and certificates offered by other recognised Indian Universities.

The CIG is not a requirement for primary-school teachers, and does not entitle the holder to any promotion or increment in wages. No employing authority has yet made it a necessary or a desirable qualification for the job of a teacher or a counsellor. The CIG has the status of an in-service refresher or orientation course. It attracts due credit for posts, if any, in the private sector of primary-school counsellors.

The programme has earned a good reputation generally. Some schools make all their teachers take the course. The programme is well-regarded by experts in child guidance. School counsellors find it useful in performing their tasks.

The course has students in five Middle Eastern and African countries. Its printed material has been bought by people in India, Pakistan, the USA and Great Britain.

Conclusions and Recommendations

The CIG is, conceptually, a good programme. However, with review and revision of various elements and with more efficient management of its implementation, it would do better. One of the main conclusions of this study is that the CIG should be a non-credit course, which would be more appropriate to its purpose and target audience. Below are specific recommendations for improving various aspects of the CIG programme.

Instructional Material

Reduction of the theory part of the programme, basing it more on native cultural practices with illustrations from real-life experiences, the use of simpler language and the inclusion of step-by-step guidance on completing assignments and would make the programme more suited to the level of the learners. Producing the materials in all regional languages would also make the programme more accessible to learners.

Support

The following targets need to be met to improve student support:

- monitoring of support services by the authorities at the headquarters
- frequent communication with the students: simple letters reminding students when assignments are due, asking for feedback on counselling sessions or generally enquiring about students' progress would help motivate the learners
- prompt response to students' communications and prompt marking and feedback on assignments
- better management of study centres and more efficient organisation of counselling sessions
- maintenance of systematic records of assignments and counselling sessions
- a mechanism for addressing students' grievances, complaints or problems of any type.

Assessment

It is the researcher's considered view that the CIG should be a non-credit course with no compulsory assignments or examinations. It should be possible in a distance education system to devise alternative ways of assessment to justify the award of a certificate. A mechanism could be devised by which the university could evaluate what impact the course has had on students' performance of tasks learnt. For instance, the students could be asked, some time after the course has finished, to present a report about how they have changed their methods of child-rearing. If students want a certificate, they may be asked to attend a *viva* on the basis of their report.

Even if this course of action were not to be taken, the term-end examination could be improved by the inclusion of objective-type questions and the preparation of an item bank. Some flexibility in the assignment submission schedule might also improve the assessment system.

Efficiency

Imaginative publicity may help to increase enrolment, thus allowing the programme to make economies of scale and increase efficiency.

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8   South Africa: New Routes to Teacher-education Degrees

Executive Summary

This case study examines the courses offered by the Education Faculty of UNISA, one of the world's largest distance-education universities. Distance education has played a prominent role in the training of teachers in South Africa. More than a third of South Africa's primary and secondary teachers were involved in some form of distance education in 1995. Despite limitations in its current teacher training model, it is anticipated in terms of the current rationalisation of tertiary education institutions in South Africa that UNISA's role in the provision of distance education will become even more pivotal, both in the pre-service and in-service training of teachers.

Introduction

The world's population growth is outpacing the world's capacity to give people access to higher education, and university education in particular. One reason for this is that the majority of the world's population is less than twenty years old. Another is that with rapid technological change and increasingly rapid channels of communication and information-distribution, education is increasingly being viewed as a life-long process in all professions. These realities challenge the traditional concept of the university, and pose particular challenges in the poorer countries of the developing world. One solution has been to develop open universities based on the British model. By the late 1990s, there were over 30 open universities and a large number of conventional universities had established open-learning programmes.

Open learning and distance education pose particular challenges where the education of teachers is concerned. In terms of a massive projected increase in demand for education worldwide, there are high levels of demand for trained teachers at all levels in the educational hierarchy. The issues of how teachers are trained and should be trained both pre-service and in-service, and whether distance education programmes are able to make a particular contribution in this respect, are addressed in this case study. At issue are not only the costs of conventional versus distance teacher education, but also the issue of quality.

A number of claims have been made (for example, Adkins, 1999; Oliveira & Orivel, 2003) about the potential of distance education to provide large-scale and low-cost solutions to educational problems. This case study focuses on this issue and also on the issue of learning support, and what this implies in terms of cost-effectiveness. Finally, and perhaps most importantly, this case study focuses on the work of UNISA, one of the longest-established distance education universities in the developing world, with the aim not only of providing insight into the way in which teacher education is implemented at this institution, but also how the conceptions of distance educators need to change and adapt in order to be relevant to national development.

Background

Table 8.1: South Africa: National Data

Population (millions)		42.8
Size ('000 km^2)		1,221
GDP per capita (purchasing power parity US$)		8,908
Human Development Index		0.702
Educational data	*Primary*	*Secondary*
Teaching force	224,896 [a]	113,215 [b]
Total '000		
'000 female	165,398 [a]	71,452 [b]
Gross enrolment ratio		
All students	133	95
Female	131	103
Pupil teacher ratio	36	29

Source: UNDP, 2001; UNESCO, 2000; UNESCO, 2001; Note: population, size, GDP and HDI figures are for 1999; education figures are for 1996; a: 1995; b: 1991

Chapter eleven examines another South African distance programme. To avoid duplication, the national data in table 8.1 above will serve for both chapters.

Africans make up around 78 per cent of the population of South Africa, whites 10 per cent, coloured people nine per cent, and Indians three per cent. 35 per cent of the population was under the age of 15 in 1998, while five per cent was over the age of 65. 52 per cent of the population were women, and 48 per cent men.

Demand for Education

In 2000, close to 6,339,653 learners were at primary school, and 3,502,653 at high school. It was anticipated that these numbers would increase to 6,975,339 primary-school and 3,975,021 high-school learners by 2009 (Strauss, van der Linde & Plekker, 1999). These projections, as well as gross estimates of population growth are, however, likely to be inaccurate, owing to the influence of HIV/AIDS: some six million South Africans were estimated to be HIV positive at the end of 2000, while life expectancy was likely to drop from 68 years to 48 in 2010 (South Africa Survey, 2000/2001).

In terms of throughput to higher education, 549,203 learners were enrolled at Grade 12 (Senior Certificate) level in the 2000 (Bot, 2001). In 1999 pass rates at senior certificate level were around 50 per cent across the education system as a whole. The proportion of candidates passing the senior certificate examination was 49 per cent in 1998 as well as in 1999. However, there was a drop of approximately 23,000 in the number passing the examination. The proportion of candidates obtaining matriculation exemption (high enough marks to gain entry to university) dropped from 13 per cent to 12 per cent, a decline of 6,131 in numbers (South Africa Survey, 2000/2001). The range of matric pass rates (Grade 12 exit level certification) from school to school was very wide in 1999, with certain schools achieving a 100 per cent pass rates, while in other schools the pass rates were as low as 0 per cent (Source: Department of Education, personal communication).

With respect to higher education, projections made in 1997 estimated an increase in student enrolments, which did not occur in practice (Hartshorne, 1999). Instead, student enrolment in higher education declined by seven per cent between 1998 and 1999 (by 41,000 students). This represented a decrease of approximately 26,000 full-time equivalent students. A total of 67,500 students graduated from South African universities in 1998 (25 per cent of them graduating in education) as compared to the 21,500 graduates from the Technikons in the same year (Ministry of Education, 2001).

Teachers and Their Qualifications

In 1999, South Africa had an estimated 347,454 teachers, of whom 75 per cent were qualified. The highest proportion of underqualified teachers were working in the North West province, and in KwaZulu/Natal (Strauss, van der Linde & Plekker, 1999), while the lowest proportion were in the highly urbanised province of Gauteng, and in the Western Cape. Pupil-teacher ratios across the whole of South Africa were 32:8 in 1999, ranging from a low of 28:8 in Gauteng province, to a high of 35:7 in the Eastern Cape (South Africa Survey, 2000/2001).

The number of students enrolled at teacher-training institutions dropped from about 200,000 in 1994 to 115,000 in 2000 – a drop of 43 per cent. At the same time the number of teacher-training institutions dropped by 45 per cent from 150 in 1994 to 82 in 2000. Of the 50 remaining colleges of education, 27 (including two distance-education colleges) have been earmarked for incorporation into universities and technikons. It is anticipated that the number of teacher-training colleges will be reduced to 25.

One of the reasons behind the drop in numbers is that the National Audit of Teacher Education conducted in 1996 reported no shortage of teachers (Hartshorne, 1999). In addition, 30 000 additional teachers were hired for deployment in disadvantaged schools (Bot & Schindler, 2001). However, the distribution of supply of teachers across the provinces remained uneven, and certain provinces reacted to an apparent oversupply by redeployment or in certain cases retrenchment. This was a controversial policy, as the offer of retrenchment packages was accepted in the main by more qualified, experienced teachers.

In the six months before December 1996,, for example, 11792 teachers accepted severance packages at a cost of R778 million to the taxpayer (Hartshorne, 1999). Between 1996 and 2000, R1.3bn was paid out to 21,326 teachers who left the profession (*Sowetan*, 10 July 2000).

There has also been a drop in the number of serving teachers due to HIV/AIDS. In July 2000 the South African Democratic Teachers' Union stated that HIV/AIDS was claiming the lives of at least ten teachers a month (*Beeld*, 28 July 2000). Some idea of the effects of the HIV/AIDS epidemic on the teaching profession can be gained from a recent paper (Masondo, 2002) which suggested that in the year 2000, 12% of all South African teachers were estimated to be HIV positive. Based on total numbers in the teaching profession (375,000 teachers; 5000 inspectors/advisers and 68 000 school managers) it was estimated that 53,000 educators would die by the year 2010, or between 88 000 and 133 000 active members of the profession if HIV/AIDS prevalence reached between 20% and 30%.

Faced with this evidence, and evidence of a major drop in enrolments of students enrolling for teacher training courses, it is difficult to understand continuing perceptions on the part of government of an 'oversupply' of teachers in South Africa. As Bot and Schindler have

pointed out (2001), policy projections made after the country's first democratic elections were initially based on 1994 figures in the national data-base, which were inaccurate. They were also based on the assumption that under the racially segregated apartheid education system, schools for white children were well endowed, having lower pupil-teacher ratios than schools for other sectors of the population (Hartshorne, 1996; 1999). Increasing pupil-teacher ratios in classrooms in these schools would thus produce an excess of teachers, who would be offered the options of resignation, redeployment or early retirement.

According to the Minister of Education, in the year 2000 a total of 36,158 teachers were deemed 'in excess', of whom 12,495 had been redeployed and 2,205 had resigned voluntarily. This left 21,458 teachers who still had to be redeployed over the coming years (South Africa Survey, 2000/2001). Hartshorne (1999) has commented that in the final analysis, retrenchment is likely to have cost the education system the services of some 11,000 experienced teachers. As Bot and Schindler have observed (2001) retrenchment has been an expensive option.Two additional areas which require comment in the context of the need for trained teachers versus the capacity of South African universities to supply the demand, are the further education and training component of teacher education, as well as the postgraduate supervision of education students completing masters and doctoral degrees. An analysis of graduate patterns indicates that the higher education system is currently producing an estimated 4,600 masters graduates (five per cent of the total enrolment) and 750 doctoral graduates (0.8 per cent) annually. Taking these figures into consideration, the Ministry of Education is currently projecting an annual graduation of six per cent of teachers at master's level and one per cent at doctoral level (Ministry of Education, 2001). A proportion of these students will presumably contribute to the training of South African teachers in the future.

In terms of distance teacher education, more than a third of South Africa's primary and secondary teachers were involved in some form of distance education in 1995 (Hofmeyr & Hall, 1995). This involved a total of 129,614 students, making distance education the predominant mode of teacher education in the country. The majority of these teachers were studying at tertiary-education institutions in Gauteng province, and around 29,000 students were enrolled in teacher-education programmes at universities.

Origins and Development of UNISA

The University of South Africa (UNISA) was established as a federation of colleges in 1916 (although its roots can be traced back to the founding of the University of the Cape of Good Hope by Royal Charter in 1873 (SAIDE, 1994). As each of the federated colleges became independent, UNISA came to focus on the provision of external studies' (SAIDE, 1994) and began distance teaching as the University of South Africa in 1946 (Boucher, 1973).

UNISA has grown from a handful of about 30 staff (of which 15 were teaching staff) and 2,000 students in 1946 to approximately 3,000 staff in the year 2000 (of which 1,800 are teaching staff) and 111,758 students. While the years up to 1990 reflected a steady growth in student numbers, over the past decade, however, there has been erratic and fluctuating growth. In 1990 UNISA had a student enrolment of 104,302 (Strauss, van der Linde & Plekker, 1999), while in 1996, it had a staff of 3,459 and 128,454 students (UNISA Pocket Statistics, 2000). This made UNISA the largest university in the country and one of the largest in the southern hemisphere and in 1996 nearly 40 per cent of all university students in South Africa were taking their degrees through distance education at UNISA.

UNISA'S Faculty of Education

The primary role of the Faculty of Education is to offer pre-service and in-service training programmes and qualifications to teachers involved in distance education at postgraduate level. In the training of teachers, the Faculty of Education provides a potential route to qualification for many students who would otherwise not have the opportunity of studying at university. In particular, it caters for many students who live at great distance from the university. Currently, the majority of education students are resident in Gauteng Province (in which the head office of the university is situated), Kwa-Zulu/Natal and the Northern Province. Approximately 486 foreign students, representing 8.9 per cent of the total number of 5,440 students, enrolled for courses in the Faculty of Education in 2000. Most of the foreign students enrolled for the BSecEd, BPrimEd, HEd (Postgraduate), BEd (Postgraduate) and Postgraduate Diploma in Education.

Enrolments

Between 1995 and 2000, enrolments in education and teacher-education programmes in South Africa fell from a peak of 35,600 in 1995 to 22,500 in 2000. This represents an overall decline of 37 per cent (Ministry of Education, 2001). Over the period 1995-1999, UNISA was particularly hard-hit by a drop in enrolments (Strauss, van der Linde & Plekker, 1999). Student numbers at UNISA increased from 104,302 in 1990 to 135,079 in 1996 but decreased to 103,389 in 1999. This affected the amount of fees received from registered students as well as the amount of state subsidy received by UNISA, and has a direct influence on the degree of student support for distance-education students that UNISA is currently in a position to provide (Mackintosh, 1999b), or to plan for the future over the short to medium-term.

Overall, there has been a decrease in numbers of students registering for courses in education at UNISA since 1994. UNISA's enrolments in individual courses in education, which stood at 59,897 in 1997, dropped to 33,931 in 1998. In 2000, the Faculty of Education's enrolments stood at 23,903. This represented a 42 per cent drop in individual course enrolments in education since 1998, and a 58 per cent drop since1997. Currently, there are signs that education enrolments at UNISA are on the increase. In 2001 there were a total of 59,600 enrolments in education courses – an increase of 149 per cent over the 2000 figure. (Note: the Faculty of Education reports enrolments in modular courses, rather than by degrees or programmes.) At post-graduate level, and with specific reference to the Bachelor of Education with specialisation in Education Management, the enrolment grew from 671students in 1999 to 938 students in 2000. The latter statistic reflects a broader national trend, with students opting for qualifications that can ensure promotion possibilities in future.

UNISA's Approach to Teaching Education

As was the case in a number of other South African universities at the time, the Faculty of Education at UNISA in the 1980s and 1990s was focused around the discipline of fundamental pedagogics, and this provided the philosophical and conceptual underpinning for all courses, and for the teaching of education as a whole.

With the coming to power of the ANC government after the country's first democratic elections in 1994, UNISA's approach to teaching education as a discipline, and its approach

to distance education, were challenged in a number of critiques. Some of these formed part of a formal review process by the incoming government. Perhaps the most influential review was the critique delivered by an International Commission on Open Learning and Distance Education in South Africa, chaired by Professor Dhanarajan, Director of the Open Learning Institute of Hong Kong. The commission noted major gaps in UNISA's distance-education model, in terms of both teaching approach and student support, which placed students at a potential disadvantage compared to face-to-face students. In addition, the commission highlighted the relatively small amount of time spent on the planning and development of new courses and the revision of existing ones. The lack a team approach to course and curriculum development, resulting in course materials that in the main were dull, impersonal and narrow in focus, was also criticised. In addition, comment was made concerning limitations in the approach adopted for the training of teachers, and the courses offered to education students.

UNISA also commissioned its own review of its first-year courses in the early 1990s (Swift, 1993), which noted a number of limitations in the model of distance education adopted, as well as the level of student support provided by the university.

These reviews and critiques have had a major impact on UNISA and have contributed to a number of changes in the Education Faculty. After the publication of the SAIDE report (SAIDE, 1995), a number of innovations were suggested by the Faculty of Education (Faculty of Education, 1995) including the:

- redesign and modularisation of degree programmes
- adoption of an inter-disciplinary, inter-faculty and inter-departmental approach to the design, development and delivery of new programmes
- adoption of an eclectic approach when pedagogy and foundational theories have to be prescribed for developmental purposes
- adoption of a multi-purpose, problem-oriented and thematic approach to the development of course materials
- introduction of a variety of programmes to support the government's Reconstruction and Development Programme
- restructuring of the Faculty of Education
- adoption of open learning principles with lifelong learning as the aim in programme design.

Organisational Structure of the Faculty of Education

Restructuring of the Faculty of Education began in 1996 by changing the focus and composition of the academic departments, and reducing the number of departments from six to four. The Department of Fundamental Pedagogics was changed to the Department of Philosophy of Education, and fundamental pedagogics no longer forms the conceptual basis of all education courses. In 2000, UNISA's Education Faculty consisted of 76 academic and 15 administrative staff. The organisational structure of the Faculty of Education is shown in Figure 8.1.

Figure 8.1: Organisational Structure of UNISA's Faculty of Education

DEAN'S OFFICE

Management of finance; Liaison; Marketing; Planning; Quality promotion; Staff development; Learner support

ACADEMIC DEPARTMENTS DEGREE AND DIPLOMA PROGRAMMES				EDUCATIONAL RESEARCH AND SUPPORT SERVICES		COMMUNITY EDUCATION CERTIFICA COURSES		
Department of Primary School Teacher Education BPrimEd HEd (PrePrimary) HEd (Prim) BEd (PrePrim) MEd & DEd	Department of Secondary School Teacher Education BSecEd HEd (Postgraduate) MEd & DEd	Department of Further Teacher Education Further Diplomas in Education PGDDE MEd (Course work) MEd & DEd	Department of Educational Studies BEd (Hons) DTE General Education I-III MEd & DEd	Institute for Educational Research (IER) Research promotion Research support Coordination and Administration MEd & DEd	Bureau for Student Counselling and Career Development	Institute for Adult Basic Education and Training (ABET) ABET Certificates and Diplomas	Centre for Community Training and Development Certificate courses and programmes	Cer Edu Cer cou pro;
INTEREST GROUPS		Comparative and International Education		Research Methodology		Education Management	Socio-Education	
Philosophy of Education		History of Education		Early Childhood Education		Curriculum Studies and Didactics	Environmental Educatic	
Adult Education		Psychology of Education		Special Needs Education		Science, Technology, Environmental and Mathematics Education	Distance Education	

169

With this restructuring the university attempted to embrace teacher education's priorities in terms of the different stakeholders and environments employing teachers in the private and public sectors. A clear distinction was drawn between pre-service and in-service teacher education, and between primary-school and secondary-school teacher education. This distinction paved the way for the development and structuring of three distinct departments – the Department of Primary School Teacher Education, the Department of Secondary School Teacher Education, and the Department of Further Teacher Education.

The emphasis of the former two departments fell mainly on pre-service teacher education and postgraduate teacher education. The emphasis of the latter provided mainly for the upgrading of teachers' qualifications in the different fields of specialisation specified by the norms and standards set by government for teacher education. The fourth department, the Department of Educational Studies, aimed to provide the principles, foundations and theory of education required by the majority of programmes, as a basis for curriculum development

New Developments in Education and Teacher Education

The majority of programmes offered by UNISA's Education Faculty in the early 1980s and 1990s focused on upgrading under-qualified teachers at primary and secondary school level. The Higher Education Diploma (Postgraduate) attracted many students, while a Higher Education Diploma (Postgraduate Pre-Primary) catered for prospective primary-school diploma holders and graduates.

In 1997 the Faculty introduced its first further education diplomas. Teaching commenced in three specialisation areas (Multicultural Education, Educational Evaluation and Environmental Education), with the aim of providing a structure for upgrading teachers' qualifications to a fourth-year level.

In 1998, UNISA introduced two new undergraduate teacher-education programmes – the BPrimEd and the BSecEd. The introduction of these programmes was an attempt to provide a route to pre-service teacher qualification and a means of upgrading the qualifications of in-service primary- and secondary-school teachers. (Previously UNISA's BPrimEd programme was offered only to students registered at the Pretoria College of Education.) 1998 also saw the admission of teachers with a postgraduate teaching qualification or first teaching degree into two master's programmes – MEd with specialisation in science education and MEd with specialisation in environmental education.

Research

The allocation of personal research grants for attendance at international conferences and for research projects is a good indicator of staff participation in and commitment to research. Data to in support of such developmental scholarships were not available. However, what we can report from our investigation is that US$ 22,745 was allocated by the National Research Foundation (NRF) to higher education for attendance at short courses and conferences in the financial year commencing 1 April 2001. This provided funds for 204 national participants to attend international conferences and short courses. 30 grants were made available to UNISA staff, while only two grants of US$ 1,967 were provided to staff in the Faculty of Education over this period.

Another indicator in relation to research-related support is grants made to support visiting fellows' participation in programme development, knowledge exposition and staff development. The NRF has contributed US$ 141,987 to sponsor international scholars to visit South Africa since April 2001. However, UNISA has acted as host to only seven fellows and the Faculty of Education did not act as host to any of these participants.

For the 1999 academic year 23 Education Faculty members published 27 articles in accredited and refereed journals. Eight of these were published by academic staff in the Department of Further Teacher Education, the Department of Primary School Teacher Education and the Department of Secondary School Teacher Education. During the following year (2000), 16 Education Faculty members published 22 articles in accredited and refereed journals. 35 of these were published by academic staff in the Department of Further Teacher Education, the Department of Primary School Teacher Education and the Department of Secondary School Teacher Education in 1999 and 2000. The total subsidy received by the Faculty of Education for contributions in accredited journals amounted to US$ 61,200 in 1999 and US$ 49,867 in 2000 (UNISA, 2001a; UNISA, 2001b).

Implementation of Distance Education

The Faculty of Education's model of distance education places a strong emphasis on printed tutorial material –individualised study guides, prescribed and recommended textbooks, tutorial letters – and occasional audio and video-tapes. On registration, each student receives a tutorial package consisting of the first tutorial letter(s), a study guide, information on the prescribed books (which is not included in the tutorial package), as well as audio- and video-tapes where applicable. A general guide on the completion of assignments and information on use of the library is also made available. For several years, a guide on the radio programmes to be broadcast during the year was also made available to students early in the year. However, UNISA no longer uses radio due to lack of student support for the initiative.

The separation between student and teacher remains one of UNISA's biggest obstacles, and one that the Faculty of Education has yet to resolve. In an attempt to cope with this problem, each teacher-education programme includes an observation workbook. The workbook structures the teaching practice periods and gives the student-teacher the opportunity to plan the daily presentations, record observations and keep a record of mentor teachers' assessment reports.

The inclusion of mentor teachers into the supervision of teaching practice is clearly a step in the right direction, and one on which the Education Faculty is likely to build in the future. However, the experience of other distance-education universities (for example Britain's Open University) is that this model presents a number of challenges (UNESCO, 2002). While it has considerable potential as a methodology for developing good practice in teaching, it poses particular problems for quality control.

Development of Printed Materials

The printed study guide that accompanies the prescribed material or reader is compiled especially for the course. In most cases the study guide is designed as wrap-around material, to reinforce and supplement concepts introduced in the textbooks, guiding the learner through the texts, highlighting key points and enhancing learning. The study guide

is especially important when textbooks have not been written by lecturers specifically for UNISA students. The guide is divided into a number of units or modules, each with its own specific objectives. It highlights content from the accompanying textbooks, presents problems and discusses different facets of the work. A number of self-evaluation questions are posed at the end of each unit or module. The study guides are revised every three years and the content and activities subjected to external assessment.

This approach to wrap-around course development was criticised by the SAIDE commission as sterile and limiting to students (SAIDE, 1995), while the courses developed by the Education Faculty were criticised as abstract, dense and obscure (ibid) and divorced from the day-to-day realities faced by teachers in a developing country. The styles of delivery and course implementation were also criticised as being centralised in character, and not including the type of regional and local student support and tutorials that could make UNISA courses accessible to students (ibid).

There are currently some attempts at innovation in this respect. A joint project between the Bureau of University Teaching, the Student Service Bureau and a number of academic departments has given rise to the Delta Project (Didactic development and evaluation of learning materials and tutorial methods for academic success) (Van Zyl, 1996). One of the outcomes of the project was the introduction of a nine-day instructional design course for all faculties in 1995 (Heese, 1995) and the consequent development of personalised tutorial materials to enhance and facilitate learning (Van Zyl, 1996). The instructional design process has followed nine themes or topics, introduced as nine individual study units:

- Unit 1: Needs analysis
- Unit 2: Developing aims and objectives
- Unit 3: Structuring the course
- Unit 4: Creating diverse learning opportunities
- Unit 5: Teaching reading and study skills
- Unit 6: Reader-friendly writing for students
- Unit 7: Teaching students writing skills
- Unit 8: Activities in text
- Unit 9: Setting assignments and examinations.

In addition, there is evidence of the development of more student-centred approaches to materials development and tutorial support in certain UNISA departments – for example, UNISA's Adult Basic Education and Training Project, a summary of which is provided in Box 8.1.

The evidence would suggest that UNISA materials as a whole are now far more student-centred and experientially based than previously, but that problems persist in the development of student support and face-to-face tutorials. UNISA's distance-education model as a whole is still based on centralised teaching, travelling lecturer, large-group and external support, rather than regular face-to-face contact.

Box 8.1: The Adult Basic Education and Training Project (ABET)

The Adult Basic Education and Training Project was established at UNISA in 1994, with the aim of contributing to poverty alleviation through adult basic education and training, improving the opportunities for the poorest South Africans and increasing their potential to contribute to South Africa's future.

During Phase 1 a core methodology was developed aimed at training adult basic education and training practitioners through distance education. The model included tutor training, practitioner training and support to Adult Basic Education learner groups. Distance education materials were developed to meet the needs of the learners and their tutors. The materials were designed on participatory, experiential and cooperative learning principles, in which student-friendly written material formed the basis for an active learning process, supported wherever possible by discussion and activities undertaken in tutorial groups.

The first level of training involved training tutors in adult education methodology. This was followed by training adult-education practitioners, who in turn trained adults in community settings. The response to the project's approach was rapid, and by 1999 over 10 000 adult education practitioners had been trained. Enrolments on the Adult Basic Education and Training Certificate for 1999, 2000 and 2001 were 1,982, 2,857 and 3,911 students respectively, while the equivalent figures for the Adult Basic Education Diploma in these years were 2,372, 1,575 and 1,922 students. The ABET unit has plans for a BEd and a Masters degree linked to the above structure.

The ABET unit has had high-level executive support from UNISA's management. The unit has also been helped by its location as part of the efficient UNISA editing, printing and postal services, as well as the university's local infrastructure of regional centres and examination centres. The unit's staff have used considerable ingenuity to work within and build out from the existing infrastructure and change it to suit the programme's goals. The result has been a transformation in the way tutoring and student support are implemented in UNISA's regional centres. ABET's model has also influenced the way other UNISA departments carry out their work.

The ABET unit has been assisted by grants from Britain's Department for International Development (DFID). Once DFID funding comes to an end, continuity should be possible from student enrolments and fees, as well as to a limited extent from sale of services and materials. The unit is highly cost-effective, operating with a small core staff of three academic staff, three administrative support staff and three part-time advisors.

ABET's work has been the subject of a number of evaluations. The overall conclusions have been that the project is an outstanding success, financially sustainable and has a promising future. There is a close link between the theory of adult education and its practice in the ABET programme, in the tutorial support provided for learners involved in distance education and in the accessibility of the learning materials. The materials are visually exciting and are written with participatory, experiential and cooperative learning in mind.

The work of the ABET has implications in its conceptualisation of adult education as a continuum in which both formal and non-formal education are clearly linked, and for the role universities can play in developing this continuum. The ABET unit's success demonstrates not only how universities can bring their considerable conceptual and intellectual resources to bear in the service of national development, but also how distance education can make a contribution in this area.

Student Support

UNISA is still primarily a distance-education university operating on a centralised model of course development, in which regional centres exist, but are mainly used to implement learning strategies and materials developed centrally. The current model involves very

limited student support. However, attempts are being made to change this, and to offer an increased number, intensity and variety of support services to students on a regional level.

Support services offered include tutorial letters, discussion classes, face-to-face tutorials, audio- and video-tape support and video-conferencing facilities. In addition, there are current initiatives in the area of computer-based technologies, which are still at the research and development stage. Radio-based communication with education students was also attempted in the later 1980's, but abandoned owing to the high costs of the initiative, and lack of support from the students.

Tutorial letters

The first tutorial letter the student receives on enrolment serves as a general orientation to the administrative procedures related to the course. The names and telephone numbers of the lecturers concerned, the academic departments as well as information on the examination and assignments appear in this tutorial letter. This specific tutorial letter is compiled annually.

In addition to the first tutorial letter, all students receive an average of six additional tutorial letters during the year. Information on possible discussion classes to be held at different venues during the year, memoranda of the assignments, perspectives on the examinations, examination papers of the previous years, as well as details on the radio programmes are set out for students in these tutorial letters (Fraser, 1994).

Discussion Classes and Face-to-face Tutorials

The main campus of UNISA is situated in Pretoria, with regional offices in Cape Town, Durban and Pietersburg. These regional offices provide restricted services, such as registration of students, student counselling, library services and lecture rooms. Lecturers visit these and other centres occasionally for group discussions. In addition, many learning centres now have tutorial services available for some of the first-year courses at UNISA. Video-conferencing facilities are also available in the Durban, Pietersburg and Cape Town regional centres. UNISA's intention is to establish a regional office in each of the nine provinces in South Africa. The establishment of COLISA (Confederation of Open Learning Institutions in South Africa) with Vista University and Technikon SA in late 1996 will lead to the availability of more learning centres throughout the country as the resources of all three institutions will be pooled.

Discussion classes normally form part of the tutorial package of the majority of courses offered by UNISA. These classes are normally held twice annually in the major centres situated in Pietersburg, Durban, Cape Town, Port Elizabeth and East London. One of the aims of these classes is to orientate students in the field of study and to highlight essentials, explain concepts and demarcate the field of study. The contact with students normally involves travelling lecturers and is also normally conducted in large groups, rather than involving small-group tutorials or ongoing face-to-face tutorial support.

One of the reasons for this is the high cost of small-group and face-to-face tuition. However, while these constraints pose major challenges, there may be possibilities for moving forward in this area. Certain departments at UNISA have been successful in offering regular and routinised face-to-face tutorial support on a wide scale. The innovations in course development and student support undertaken by the Adult Basic Education Project (see Box

8.1), for example, have been supported by external grants in the establishment and early implementation phases, but are likely to prove financially self-sufficient in terms of increased student enrolments, student fees and government subsidies.

Technology

In 1988/1989 UNISA aimed to provide radio broadcasts in support of its printed materials. This was introduced when some courses became too large, and discussion classes had to be abandoned because no suitable classroom facilities could be found to accommodate the large student attendance at certain centres.

20 half-hour programmes were presented annually per course, and in many cases replaced the audio-tapes that formed part of many tutorial packages. The broadcasts normally ran between 21:00 and 22:00 on weekdays and were repeated between 09:00 and 10:00 on Saturdays. Lecturers followed different approaches in the planning and preparation of the programmes (Fraser, 1994). The radio programmes were used to clarify and explain and essential terms, concepts and principles used in the text. The contents of the programmes were also used to supplement the text. The programmes were used to bridge theory with practice, and to illustrate how everyday experiences are related to educational theory.

Some of the broadcasts were structured as tutorial letters and mailed well in advance of the scheduled broadcasting date to all students enrolled for the course. These letters were used as structural maps or organisational plans of the broadcasts, with the aim of guiding the listener through the presentations. To accommodate students living outside the normal transmission ranges, the university also taped the broadcasts and mailed the tapes to all students involved in these courses.

These presentations were terminated after two years for the following reasons.

- The broadcasts became very costly and it became impossible to find sufficient sponsors to support the programme.
- Staff received little training in broadcasting skills and techniques with the result that the outcomes of the presentations were poor and contributed little to student learning.
- Because the university opted for relatively late and therefore less expensive broadcasting hours, very few students listened to the broadcasts.
- In many cases the broadcasts became repetitions of the text and tutorial letters, contributing little to the academic development of students.

Audio-tapes and video-tapes are currently provided as an integral part of many UNISA courses. Television offers a number of possibilities, but is not a viable option currently in the absence of a national policy on use of television to support national – and particularly educational – development. In contrast, use of video-tapes as an integral part of a computer-based distance-education initiative would be a more versatile option, and one that has the potential of wider and more continuous access to students across the country as a whole. UNISA is placing priority on this.

Computer-mediated Instruction

In line with trends at other universities internationally, UNISA has embarked on a computer-mediated communication (CMC) and World Wide Web (WWW) initiative (Heydenrych, 2001). At this stage, however, the use of the Internet for course transmission

and for communication with lecturers is still very limited, with traditional modes of delivery still being maintained by the University as its primary means of communicating with students.

It is likely that use of computer-based technologies will grow rapidly, with computer-mediated instruction being used in the following ways:

- a first-generation correspondence-based delivery mode with limited internet access
- a second level, so-called 'adjunct delivery mode', consisting of optional Internet technologies
- a third-level mixed mode of delivery, embracing fully integrated elements of CMC and WWW technologies into the curriculum
- a fourth-level on-line delivery mode based on extensive on-line registration, teaching and support (Heydenrych, 2001).

It should be stressed that at this stage these initiatives are still at the developmental stage, and are not yet being implemented across the University as a whole or on a wide scale.

Assessment

Details of assignments are usually given in the first tutorial letter. One or two assignments usually have to be completed by students during the first four months of the academic year. Students receive a number of credits for a pass (50 per cent) and have to accumulate 100 credits to be admitted to the examination. Students who fail an assignment can submit an alternative assignment in the specific perspective. They are also encouraged to submit all assignments during the academic year. This encourages them to work systematically before the examinations at the end of the academic year (Fraser, 1994). The staff attempt to ensure rapid marking, with the aim of returning assignments to students within three weeks.

Costs

McFarlane (1992) focused on three cost variables relative to UNISA's work – the cost per enrolled student, the cost calculated per successful student and the cost of the mode of delivery – as influences on the overall cost of distance education. These variables (which form the basis of the government's current formula for funding UNISA's work) will first be considered in terms of calculating the cost of the current model of distance education adopted by UNISA's Education Faculty. Additional factors relating to costs of additional support for students will then be considered and factored into the model.

Distance education has achieved significantly higher participation rates per cost unit when compared with residential education (Mackintosh, 1999a). This applies specifically to the advantage of standardised mass-produced learning resources, a strict division of labour between the categories of design, development and delivery, and the processing of learning materials based on a production model.

All formal teacher-education programmes in South Africa are state-funded but the 24 per cent decline in public expenditure on higher education since 1986 has seen a significant 'privatisation' of the public sector (Gultig, 2000). The total budget for 2000 was close to US\$ 115,385 000. State subsidy contributed approximately 53 per cent to the budget, while 40 per cent came from student registrations and enrolments, five per cent from investments and the rest from other sources.

In 2000, each of the modules of the BPrimEd and BSecEd programmes was developed at a total cost of approximately US$ 26,078.09, with an annual development estimation of US$ 3,650.93 per module. The number of students enrolled for each module varied, with the unit cost per student being between US$ 1,222.05 per module (where only two students had enrolled for a module) to US$ 9.44 (where the enrolment per module was 259 students). The modular delivery cost per student was estimated at US$ 30.

In terms of comparative costs, what became evident in the Report for the National Audit (1996) was that the average cost of teacher education for colleges with more that 5,000 students was close to US$ 190 per student per annum. For colleges enrolling between 2,000 and 4,999 students, the cost increased to an average of US$ 361 per student. In 1996 UNISA's costs per student were estimated at US$ 482 (Report for the National Audit, 1996), suggesting that UNISA's costs were higher than alternative forms of teacher education at colleges involving face-to-face lecturing and tuition.

In terms of comparative costs at universities, in 2000 the student fees paid for each individual UNISA module were estimated at US$ 67.06, while similar fees for modules at residential universities were estimated at US$ 128. In terms of the above, distance education fees at UNISA compare very favourably with fees at traditional residential universities in South Africa. Assuming that each qualification comprises 40 modules, the total cost towards the completion of teacher training via the BPrimEd and BSecEd would be US$ 2,682 at UNISA, as compared to a cost of US$ 5,120 for a similar 40-module course at a residential university. (These costs are based on analysis of UNISA modular course fees versus modular fees at the University of Pretoria. An exchange rate of R 6.87 to US$ 1 is assumed, which was the exchange rate on 30 June 2000.)

Limitations in the Cost Analyses

There are a number of limitations in the above cost analyses. The first is that comparable teacher-training courses at other South African universities do not necessarily involve 40 similar modules, nor are education courses at other universities necessarily conceptualised or taught using similar experiences or even on similar basic assumptions. This implies that there are clear limitations of cost comparisons on either a modular or course-to-course basis, since one may be comparing qualitatively different things.

It must also be clearly stated that applying generalisations to comparative cost data on education and teacher training can be misleading. Given the clear limitations of UNISA's current models of supervision of teaching practice, as well as the lack of development of a viable system of regular, routinised and face-to-face tutorial support for students studying education courses, issues of quality need to be brought into any equation in which costs are quoted or discussed. In essence, there is no guarantee that, in the current scheme of things, a student registering for a UNISA course in education emerges at the end as a competent teacher. However, this could also be said of many other courses in education offered by other universities, technikons and teacher-training colleges in South Africa at present.

Additional limitations in the analysis of costs of UNISA's degrees and teacher-education programmes relate to the University's way of reporting student enrolments and pass rates by module and level, rather than by course and programme; and to the lack of analysis of costs, student fees and government subsidies as they pertain to courses and degrees as

individual cost centres. UNISA has plans for this type of course-by-course cost analysis, based on a decision taken in September 2001 that course-by-course cost-centre data would be useful in managing the institution as a whole. However, at the time of writing, these analyses were not available. Faculty budgets reflecting course-by-course allowances for running costs at faculty level were available. However, these were not helpful in calculating running costs at university level, which would have needed additional apportionment of government subsidies and fees received, in respect of administration costs, central running and maintenance costs and library and editorial costs on a course-by-course cost-centre basis. This type of analysis was simply not possible on the data available.

These factors have imposed severe limitations in the current study. In particular, lack of access to data on the development costs, administration costs and running costs pertaining to individual education courses has militated against coherent or rigorous analysis of cost data for the BPrimEd and the BSecEd, and for UNISA's education courses more generally. This is an area in which subsequent analyses and future in-depth research are clearly necessary.

Evaluation

This section summarises some of the findings of previous evaluations of UNISA as well as the findings of the present study.

Previous Evaluations of UNISA's Work in Teacher Education

In 1996, Juta and Co Ltd, in association with the South African Institute for Distance Education brought out a report on teacher education at a distance in South Africa. In this report special attention was paid to the role UNISA has played over the years. The report was very critical of the distance-education modes of teacher education used at the time, and made specific reference to outdated forms of distance education, content-centred learning materials and lack of face-to-face tutorial support (Report for the National Audit, 1996).

One of the greatest concerns reflected in these criticisms was that UNISA's teacher education programmes over-emphasised the importance of teaching methodology (general didactics) without paying enough attention to process, and to developing reflections associated with the profession (ibid). The report also highlighted the so-called 'theory-practice split' and the over-emphasis on selected philosophical approaches, and fundamental pedagogics in particular (see also Jaff, Rice & Hofmeyr, 1994, where the impact of fundamental pedagogics on teacher education is highlighted). The critiques applied to UNISA's courses also applied to the majority of distance-education teacher-training programmes.

It was noted that the main means of quality control exercised at UNISA involved updating all courses every three years. This revision was done on the basis of information obtained through interventions with students, during discussion classes and group visits, and evaluations and comments from visiting international lecturers (ibid). As a solution to the many problems raised in the report, it was suggested that a new emphasis should be placed on curriculum design, to address the need to integrate theory and practice effectively. It was suggested that multiple theories need to be accommodated in course design, and that multicultural and multilingual approaches need to be followed in the

design and development of learning programmes. It was also suggested that new strategies would need to be sought for the teaching of the subject disciplines (ibid). The lack of sound international trends in educational theory and practice was also criticised in an earlier report on UNISA's teacher-education programmes (Jaff, Rice & Hofmeyr, 1994).

Quality and Effectiveness of Student Support

In terms of the above critiques, this case study has highlighted a number of areas in which UNISA has made changes in its model of teacher education, and other areas in which there has been limited progress. If one accepts, in line with the SAIDE Commission (1995), that a well-functioning distance-education institution is one that has in place a system of services designed to support learners, and spends a large part of its budget on providing efficient, personalised and effective support to learners, then the current largely correspondence-based tuition provided by UNISA's Education Faculty goes only part of the way.

The development of an assessment procedure involving use of a workbook to guide teaching practice, and the involvement of mentor teachers in assisting students in their practical teaching in the classroom are clearly steps in the right direction. However, there are questions as to how effective this system can be in practice, in the absence of a regular, routinised system of personal contact between UNISA staff and students, involving face-to-face discussion and tutorial support. The need for personal contact and support pertains particularly to teaching practice, in which ongoing mentoring and critique is necessary. This is unlikely to work well in the absence of regular contact between UNISA staff and mentor teachers in the schools in which the students carry out teaching practice. The mentors themselves have needs for ongoing professional development and training as teacher-trainers.

The lack of regional and local systems of student support would appear to be a major limitation in UNISA's current highly centralised model of distance education. This would appear to be a particular limitation in UNISA's teacher education courses, where the development of knowledge as well as practical competence in teaching is necessary. There is some evidence that this is acknowledged, and being taken up as a challenge by the university as a whole. However, the evidence would also suggest that the most innovative solutions in this area are coming from departments and institutes situated outside the Education Faculty, rather than from within it.

One example of successful innovation at UNISA has involved the development of a cascade model for the training of adult educators, which suggests a number of ways in which greater support in teacher education could be implemented. Cascade models of teacher training have been used effectively in other developing countries, and this type of approach could provide a way of supporting education students in the field at locations close to where they live and work. It could also provide a basis for linking the theoretical side of UNISA's teacher-education courses with practice in the classroom.

This would necessarily involve the professional training of students, as well as the professional development of mentor teachers in the schools in which students conduct their teaching practice. This, in turn, could assist in bridging the theory/practice divide which militates against the effectiveness of many teacher education courses in South

Africa in terms of their aim, which is to develop skilled and knowledgeable teachers who can contribute to national development.

Problems Experienced With the Present Distance Education Teacher-Training Model

Many UNISA students still experience problems in coping with the University's distance teaching model. Many of these are technical and logistical problems such as unreliable postal services. However, many also have their origin in the centralised structure of the university, which is still predominantly a head office operation, as well as the nature and structure of the subject matter of its courses, the literacy levels of the learners, the home language of the students and the lecturing staff, as well as the reality that many students live at great distance from UNISA's headquarters in Pretoria.

In teacher education in particular, there is still a predominance of theory in the majority of courses, and a model of teaching and learning that is still highly centralised, as opposed to being school- and classroom-based. The following can be regarded as important technical, structural and functional shortcomings in the Faculty of Education's current model:

- tutorial material caught up in postal delays. The postal system in South Africa is erratic, and this has an influence on markers' schedules, the return of the marked assignments, the sending out of assignment memoranda and the receipt of these by students

- inability of the learning material to establish a level of personal communication between the learner, subject content and teacher. The institutionalisation of the learning experience (for example, the continuation of a mediated course in the absence of the original course designer and coordinator) is also often in opposition to the principle of an 'intersubjective' relationship between lecturer and student

- a separation or divorce between the teacher-trainer and trainee during teaching practice. This has been a major weakness of the Faculty of Education's model of distance teaching, and imposes severe restrictions on the effectiveness of teaching practice. This is aggravated by the fact that many of the lecturers teaching in the Education Faculty left the teaching profession many years ago and are consequently out of touch with the practicalities, problems and realities of the classroom.

Despite attempts to include mentor teachers in the assessment of the practical competence of students in the classroom, there are problems with this aspect of the model. These problems stem from the reality that new developments and trends in classroom practice are often not known by, or ignored by practising teachers. The majority of students enrolled for Education 1 or any of the HED subjects for the completion of a degree or postgraduate diploma are practising teachers. In many cases, the way in which teaching is conceptualised and practised in their immediate professional environments poses a serious threat to innovation and change (Fraser, 1994).

In terms of these limitations, improvement in the current procedures used in structuring and assessing teaching practice is clearly necessary. In particular, two limitations in the current model need to be addressed. The current model of teacher education involves mentor teachers in the assessment of teaching practice, but ignores their own needs for ongoing professional training and development, as well as the need to develop their own skills as trainers of teachers. The current model also assumes that the current centralised structure can provide the basis of regular and routinised student support necessary for students to acquire skills and competences as teachers.

The Education Faculty could fruitfully examine the methodologies of tutorial-based contact and student support used to good effect by the Open University in Britain, in which one-third of the staff of the devote their time to the provision of regional and local student tutoring and support (SAIDE, 1995). These principles are already effectively applied in the Adult Basic Education Project at UNISA, which has used a cascade model of training and support to develop the competences of those who teach as well as those who train teachers. In addition, the procedures and organisational structures adopted in the pilot project of the Open University on using schools, practising teachers and headteachers as an integral part of the assessment of competence in teaching could also provide ideas for ways forward in this area (UNESCO, 2002).

The Future: UNISA's Role in Teacher Education

In an overall context of rationalisation in tertiary education, it is anticipated that UNISA's role in both pre-service and in-service teacher education will become increasingly pivotal in the future. The Minister of Education's plan for Higher Education (Ministry of Education, 2001) provides for a single distance-education institution of higher learning in the country. The envisaged unbundling of Vista University, the merger of Technikon Southern Africa with UNISA, as well as the incorporation of the College of Education of South Africa into the structures of UNISA, is likely to further increase UNISA's role as a provider of teacher education via distance learning.

In addition, increasing co-operation with between UNISA and smaller teacher-education institutions has been taking place. It is thus likely that UNISA will play a central role in the development of teacher education through distance learning. UNISA will play a role as both a pre-service and INSET agency, and will play a pivotal role in relation to the need to upgrade the qualifications of teachers currently regarded as under-qualified (for example, teachers in possession of a two-year as opposed to a three-year teaching qualification).

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9   Chile: Teachers Learning to Use Information Technology

Executive Summary

This chapter reports on an evaluation of the Diploma in Information Technology run by the Instituto de Informática Educativa (Institute of Information Technology) at the University of La Frontera in Chile. This in-service programme enables teachers to learn to use information and communications technology (ICT) in their teaching. It uses ICT to teach teachers to use ICT. Distance education, though fairly new to Chile, was chosen in order to extend the geographical reach of the programme and to meet the teachers' needs for new skills and knowledge created by the recent widespread provision of computers to schools.

Background

Chilean territory is located in three different continents, with a total of 2,006,626 km^2. The estimated population (2001) is 15,401,952 and the Gross National Product per capita is US$ 11,093. Chile is divided in 13 administrative regions, which in turn are divided into 49 provinces and 330 counties. 85.58 per cent of the population live in urban areas. The level of adult literacy is 95.5 per cent, with the remaining 4.5 per cent concentrated mainly among senior citizens.

The Chilean communications infrastructure is one of the best in the region in terms of technology, level and accessibility. There are at least three parallel communication backbones that cover the whole country. In terms of coverage, for every 1,000 inhabitants there are 218 fixed telephones lines, 219 mobiles phones, and 45 cable television connections. In addition, there are 82 computers and 39 Internet connections for every 1,000 inhabitants. 10 per cent of Chilean homes have an Internet connection. Due to the Enlaces project, all secondary schools and about 50 per cent of primary schools have computers and Internet connections. This means that 90 per cent of the student population have potential access to computers and an Internet connection available (actual access depends on school policies).

The Education System

There are three types of schools: public schools, administered by city councils; co-funded schools, which receive funds from the state and belong to private or religious organisations; and private schools, which belong to individuals or private organisations that provide all the resources for their functioning. Schools range in size from ten students in very isolated areas to 3,000 students in big cities. In state-owned schools, the maximum number of students per class is 45. There are 3,337,976 school-age students in Chile, of whom 85 per cent go to public schools (state-funded and co-funded); the rest attend private schools.

The Chilean basic education system is structured in three stages. First, there is a one-year pre-school stage, which is not compulsory and only serves 13.37 per cent of the potential population. By law, every child must attend eight years of primary education from ages 6-14. Students can then study four years of secondary education (ages 14-18). 81.77 per cent of potential students attend secondary education.

Table 9.1: Chile: National Data

Population (millions)	15.0	
Size ('000 km^2)	757	
GDP per capita (purchasing power parity US$)	8,652	
Human Development Index	0.825	
Educational data	*Primary*	*Secondary*
Teaching force		
total '000	73,960	51,042
'000 female	53,593	26,762
Gross enrolment ratio		
All students	101	75
Female	100	78
Pupil-teacher ratio	30	--

Source: UNDP, 2001; UNESCO, 2000; UNESCO, 2001; Note: population, size, GDP, and HDI figures are for 1999; education figures are 1996

Educational Reform

The entire Chilean education system is currently going through a redesign process known as the Educational Reform. The reform is based on the poor diagnosis of the educational system that took place in the early 1990s, after which a series of experimental initiatives were launched. The experiences collected by these initiatives were considered in the design of this reform. One of the changes is a shift in focus from the teaching process to the learning process. The reform involves rethinking the curricular framework, instructional material, classroom organisation, teaching styles used and teacher education.

Three main factors make this reform different from others implemented in the past.

- First, this reform has a systemic design, affecting all the main areas of the education system step by step: teaching and learning styles, content, learning time, education management, educational resources (libraries and computers), infrastructure and budget, as well as teacher working conditions and competences.

- Second, the reform has been designed as a long-term process. It is intended that the reform will to continue to mature as it is implemented and that its results will be fully appreciated by future generations.

- Third, the reform works under a new institutional framework that combines decentralisation with positive discrimination and proactive action by the state, through interventional programmes aimed at increasing quality and equity in education. It introduces new information and public evaluation instruments for programmes and institutions, and promotes the opening of schools to 'external support networks' – particularly universities, other education institutions and companies.

The Ministry of Education states the fundamental objectives and minimum compulsory content for every school. Schools are free to choose the methodology to teach them and have the option to include other content in the curriculum. In addition, the Ministry has designed some model curricula for schools that want to use or adapt them for their own purposes.

The reform takes charge of the physical conditions and the fundamental knowledge necessary to feed the educational processes. It takes into consideration that it is not possible to renew learning methodologies without giving new educational resources, such as textbooks and computers, more time, and a strong teaching profession. Unlike former educational reforms in Chile, this reform is a bottom-up process and is gradual, incremental and micro-social

Teacher Education

Every year around 4,600 new teachers graduate from 26 universities in Chile that offer a teacher-training programme. There are currently 120,000 in-service teachers in Chile. As part of the ongoing reform, a special policy was developed aimed at reinforcing teachers' professional development and raising recognition of them in Chilean society. A special statute to govern the teaching profession was established by the reform.

The teachers' professional development programme includes different types of training (face-to-face, fundamental, distance-learning and overseas studies), a special continuous salary improvement plan, individual and collective performance awards, financial support for education faculties and a scholarship for top students who want to study education. All these initiatives came with the reform.

To support this reform in teacher education, the Chilean Ministry of Education is working with Schools of Education to change their basic teacher-training programmes. The ministry is putting money into innovative initial teacher-education projects. These projects include improvements in different areas:

- academic staff
- learning resources, including libraries and learning technologies
- scholarships for top students entering the teaching profession
- relationships with other faculties (basic sciences, history, philosophy, etc.) for updating knowledge in specialised areas
- projects and agreements with schools for improving professional practice and research.

As a result, many universities have changed their initial teacher-training programmes, making workshops, reflection and teaching practice key elements.

To be entitled to teach, teachers must have a teaching qualification awarded by a higher education institution. Nevertheless, there are some exceptions, especially in technical education where students can obtain a technical qualification that allows them to enter the job market directly after school. Here anyone with a professional qualification, or at least four years' experience in education, can be awarded a bachelor's degree in education after two more years of study. This allows them only to teach subjects related to their own discipline. Also, in cases where there are no teachers available (quite common in the past, especially in rural areas), local education authorities can give special permission to teach to anyone if they consider that he or she has the appropriate skills.

The research team could not establish the exact amount invested by the state in teacher education. Nevertheless, it is possible to estimate, given that the total state investment in universities amounts to US$ 450 million, and student teachers represent 11.34 per cent of the student population at state-funded universities. Hence, the state investment in student teacher education is estimated to be US$ 51 million. It is important to note that around 27.5 per cent of student teachers attend private universities that do not receive funds from the state.

Distance Education

In Chile, there is no official policy for distance education or normative to rule it. Therefore, any distance education initiative must be adapted to the existing normative and policies made for traditional education. There are no undergraduate distance programmes – only postgraduate programmes like the one this study focuses on. Training for in-service teachers using distance education has only been implemented recently in Chile.

Level, Purpose and Curriculum

In 1996 the national coordination of the Enlaces project, which aims to introduce IT in schools all over the country and train their teachers in the pedagogical use of this technology, asked the Instituto de Informática Educativa (IIE) to develop a pilot distance-education course to train their instructors responsible for these face-to-face training sessions. The national Enlaces coordination was looking to reinforce the technical and pedagogic knowledge of the instructors who were geographically dispersed across the country, and to explore the potential of distance education for teacher training.

Although it took some years for the Enlaces project to incorporate distance education into its teacher-training strategy, considering the success of this first initiative the IIE decided to continue exploring this methodology. This was the beginning of a systematic study on developing virtual teaching material, distance-education technology and remote communication options. Moreover, after this experience the IIE directorship decided to incorporate distance education into its academic offering. In August 1997, the first version of a distance diploma on the pedagogic use of IT was initiated. The IIE had already been offering a face-to-face version of the same programme since 1995.

There were four main reasons for introducing this alternative. First, many teachers were unable to take traditional courses because of distance and working restrictions. Second, the traditional programme was running out of potential candidates since most of the local teachers interested in the topic had already completed the programme. It must be noted that the IIE is located in a small city in the south of Chile with a relatively small population of teachers. Third, it was a way of achieving the IIE's aim of influencing the teacher population at a national level. Finally, distance education offers the opportunity to serve a large number of teachers at the same time. In addition, the IIE did not have the resources to increase the number of face-to-face students.

For this first version of the Diploma, a specially designed web interface was developed. This was a collective effort by the IIE's educators, psychologists, graphic designers and engineers. Each course had its instructors and tutors. Instructors were IIE staff who performed tasks such as preparing course content, communicating with distance learners and carrying out assessments. Tutors were student-teachers about to finish their degree,

whose responsibilities were basically to guide group work among the students and to collect their assignments before passing them to the instructor for grading. Nowadays, the tutors are specialised teachers who have graduated from the programme and they have much more responsibility for the course. They are in charge of guiding the students not just from an academic perspective, but also from a motivational point of view. The instructors are responsible for the general development of the courses and for coordinating, supporting and supervising the tutors. Both tutors and instructors assess the students' performance.

Scale of the Programme

Since 1997, there have been four cohorts, plus one special version that was run just for Colombian students. A fifth normal cohort started during the development of this study. In that period, around 360 students have graduated form the programme. The numbers of students has increased from 60 in the first cohort to around 110 in 2000. In 2001 there were 108 students selected, but only 93 began their studies. In addition, eight students who dropped out in earlier cohorts decided to start again in 2001. 24 of the 93 were foreign students.

Target Group

The participants on the programme are mainly school teachers from all over the country. Nevertheless, the programme is open to other professionals whose work is related to education – such as university teachers, and technical staff in charge of computer laboratories in schools. Table 9.2 shows the students' professions and schools positions from 1997 to 2000.

Table 9.2: Students' Professions and Positions

	1997		1998		1999		2000	
	No.	%	No	%	No	%	No	%
Teachers								
Pre-school	12	14.29	1	1.09	1	1.59	6	4.55
Elementary	21	23.81	19	17.39	14	23.81	36	26.36
Secondary	37	42.86	43	39.13	30	52.38	43	31.82
University	4	4.76	11	9.78	1	1.59	2	1.82
Other								
School admin. staff	0	0.00	7	6.52	3	4.76	2	1.82
Other school staff	4	4.76	8	7.61	5	7.94	17	12.73
Other professions	8	9.52	21	18.48	5	7.94	28	20.91
TOTAL	86	100.00	110	100.00	59	100.00	134	100.00

Students come from different regions of the country and from other Latin-American countries – Panama, Mexico, Argentina and, in particular, Colombia and Dominican Republic, with whom some institutional agreements were reached providing a significant number of students from those countries.

Table 9.3: Origin of the Students

	1997		1998		1999		2000	
	No.	%	No	%	No	%	No	%
Chilean students	67	77.3	104	93.3	51	87.5	105	77.5
International students	20	22.7	7	6.7	7	12.5	31	22.5
TOTAL	87	100.0	111	100.0	58	100.0	136	100.0

There are no records of the urban/rural origins of the students. Table 9.4 shows gender distribution for the different cohorts. Except for 2000, where all the students were considered, only graduated students were considered.

Table 9.4: Gender Distribution of Student Cohorts

	1997		*1998*		*1999*		*2000*	
	No.	*%*	*No*	*%*	*No*	*%*	*No*	*%*
Female	55	63.60	55	50.00	27	46.67	70	51.96
Male	32	36.40	56	50.00	31	53.33	66	48.04
Total	87	100.00	111	100.00	58	100.00	136	100.00

Programme Purpose

The programme is intended for in-service teachers who wish to pursue further education in how to support their practice with IT. The programme puts emphasis on teaching practice with the use of learning technologies at school level. It aims to prepare teachers to apply IT effectively in different educational activities, and to act as dynamic and innovative agents in the learning-teaching process.

The programme aims to provide a solid conceptual framework for contemporary issues related to education and IT. Students use new methods and advanced tools to improve their knowledge and skills, which they can apply in teaching and learning activities as well as school administration and management.

Curriculum

The teaching-learning model used in the programme subscribes to the constructivist paradigm – in particular, what Vadeboncouer calls emancipatory constructivism. The model is based on three fundamental principles.

- The teaching and learning process is primarily based on the provision of learning materials and the coordination of activities that provide the opportunity for reflection and for the formation of personal and collective understanding of concepts described in the material.

- The learning process is perceived as a dialogue that requires reflection, practical application, exchange of ideas and conceptual analysis. These ideas are incorporated in the learning materials, the learner's personal experience, the social context and the learner's professional environment.

- The learning experience is based on the learner's individual work and on dialogue between course participants. Peer dialogue promotes the integration of new concepts with the professional experience of each student, generating new behaviours and skills. The tutor, who is in charge of stimulating communication, supports this process.

In sum, the learning process is defined as a reflective and constructive process. These two elements are crucial to the whole process. The teachers are expected to develop a reflective attitude toward their pedagogic practices and to incorporate into their daily practice all that their learn in the courses.

Students are expected to gain two main areas of knowledge/skills from the programme: use of the technologies reviewed in the courses, (productivity software, presentation software and communication software); and application of the pedagogical element of the courses, (pedagogical models, pedagogical activities, educational projects, collaborative work, active methodologies and educational innovation.)

The curriculum consists of:

- Introduction to Information and Communication Technologies (six weeks, 10 credits)
- Contemporary Pedagogic Models (12 weeks, 10 credits)
- Pedagogic Activities supported by Information Technology (12 weeks, 12 credits)
- Collaborative Work and its Educational Application (12 weeks, 12 credits)
- Educational Project Planning and Management (12 weeks, 12 credits)
- Technical Elective (six weeks, six credits)
- Curricular Elective (six weeks, six credits)
- Final Dissertation Work (24 weeks, 16 credits).

The number of credits for each course corresponds to the number of hours a student is expected to dedicate to the course in one week. For example Contemporary Pedagogic Models is a 10-credit course, as a student must spend at least 10 hours each week on course activities and personal studies to successfully complete the course.

Although the aim of the programme is for the students to apply what they learn in the course in their daily practice, the only practical component is the final work. After their designs have been approved, students start a four-month period when they must perform pedagogical activities with their students based on what they have learned in the courses. Therefore, in terms of time, the practical component represents 2/9 of the programme. Each course involves practical use of computers.

Each course incorporates both technical and pedagogical concepts in its content. Even the most technical course, 'Introduction to information and communication technologies', has a pedagogic approach. The most educational course, 'Contemporary pedagogic models', includes examples related to the use of IT in education. Technical issues are always given a pedagogical treatment: any technical content is there because there is an educational issue that triggers the search of a technical solution. Because of this, some students, in the past, have complained about wanting a more technical curriculum – such as learning how to programme in a computer language. From the programme administration point of view, that content is beyond the scope of the Diploma. In general terms, there is only one course out of seven whose content involves general education topics – in all the others the focus is on pedagogy.

The entire programme is run at a distance, and has no face-to-face component. It is the responsibility of the instructional design team to see that every course has constructivist ideas, thus ensuring consistency between the different courses in the programme.

Initially the programme lasted 18 months. After 1999 the courses were reorganised, and now the programme lasts 15 months.

Organisational Model

The IIE is organised into areas, and each area is divided into units. The responsibility for running the programme falls on the Teaching Unit, which is part of the IIE's Education Area. In addition, the programme has a director and an academic committee who are ultimately responsible for its quality. The Teaching Unit runs different programmes and courses and is organised into two sub-units: the Course Operation Unit, which covers issues related to programme coordination, logistics and admission processes, and the Development Unit, which covers course design and implementation, tutor and instructor training and tutor coordination. The Teaching Unit contracts services from other units of the institution – accounting services from the Administration Unit, web hosting and technical support from the Technical Support Unit, and graphic design and software development from the Software Development Unit.

Interdisciplinary teams design and develop each course. IIE faculty members develop courses using guidelines generated by the programme staff. This strategy has been implemented since the beginning of the programme – therefore new teams base their work on earlier versions. Usually the work of these teams consists of a general revision of the course, which involves updating the curriculum with new information. This revision is especially necessary in technology courses, which use Internet services and productivity software. In most cases, two faculty members, who work together guiding the general curriculum, run the courses. The practical work is implemented and supported by tutors, who work directly with the students throughout the course.

Relationship to Other Parts of the Education Service

The programme is not directly related to other parts of the education service. The certification obtained in the programme does not have a direct role in teachers' career development. In general, teachers can receive a small salary increment by completing this kind of training, depending on their employer. For example, some departments of education, in the City Councils, put restrictions on the number of hours allowed for payment. Only a limited number of hours are accepted, and over a certain number, the training is not considered in the payment system. Charter schools use the same system. In private schools, each situation is assessed individually between teachers and employers.

Channels of Communication Between the Different Stakeholders

The programme is an initiative of the IIE, and is therefore independent of the government. Its relationship with the Universidad de La Frontera is through the office of postgraduate degrees. This relationship follows a mandatory process that controls certification. The programme is accredited through the Centro de Perfeccionamiento Experimentación e Investigaciones Pedagógicos (CPEIP), a government organisation responsible for post-degree accreditation processes, which is directly responsible to the Ministry of Education. Participants receive a post-title, not a degree. This certification does not allow them to teach in a public school. The title is only a certification of the knowledge acquired through the courses and does not entitle them to pursue any further qualification.

Management Information Systems

The IIE's management information system is currently under construction. Until now all the information has been managed in different databases and spreadsheets, without any formal system. The information covers students' application forms, grades and profiles.

Teaching Practice and its Supervision

The programme does not use regular teaching practice as an educational strategy. However, the final work involves the development of an innovative project using IT. The results of this project, which is supported by instructors, are expressed in a final report. Several guidelines and criteria are provided for selecting and implementing the final project. First, final projects must be a collaborative group effort, with a clear focus on the use of IT in a school environment. The focus is broad, giving students the chance to implement projects based on pedagogical or administrative use of IT. Students have six months to plan, conduct and assess the project., and the project itself must last at least four months. Students have to submit a project proposal for review by the programme team before they can implement their project.

During the process, students have the support of one instructor who acts as an advisor. The instructor is responsible for guiding the general development of the project and giving feedback at each stage. Students must submit a report mid-project and at the end of the programme. The advisor of the group and an external evaluator assess these reports. Usually this role is filled by another instructor, or by one of the Institute's professionals. The process does not involve any kind of on-site supervision.

Accreditation, Assessment and Quality Control

The IIE has an internal evaluation system designed to provide the necessary feedback on its processes. This system provides for annual assessment at different levels of the organisation with both a top-down and bottom-up approach. The assessment considers two main components: the different participants (students, tutors and faculties) and their perceptions about the curriculum and the communication processes involved. Three online survey instruments are used to gather data covering a wide range of information. One survey assesses students' perceptions about pedagogical issues such as the quality of the course, the instructional design of the contents, the design of the activities, the methodology used, and the work of the tutors and instructors. Another survey covers administrative issues such as the quality of the website, the communication process, and students' satisfaction with the administrative management of the programme. Finally, at the end of the academic programme, students assess the quality of the whole programme.

All the information retrieved is contrasted with the IIE staff's perceptions. Due to the low survey return rate, the programme staff conduct some randomly selected interviews with a number of students by telephone. Some explanations for the low return rates are that filling in the assessment forms is not compulsory; that it is time-consuming to download a file from the web, answer the survey and send it back by e-mail; and that students do not perceive the assessment process as important. From 2001 the process has been modified, using online surveys available on the website.

In order to monitor quality, the programme staff are designing an assessment plan. The goal of this plan is to monitor the quality of the internal processes using a criterion-based approach. This new approach involves:

- course assessment by instructors, tutors and students about curricular design
- student assessment system, resources available, and teaching
- programme efficacy assessment
- students' satisfaction related to courses, quality of the Virtual Learning Environment (VLE), the communication process and administrative management.

Technologies

Initially the programme used printed material to deliver information. This information was supported by an electronic version available on a website. E-mail was widely used for communication among participants. In the second year, new Internet services were introduced. Currently, the new platform uses almost all the Internet services, except video-conferencing. Even though the technology used is the same, stability and speed have been increased, improving the reliability of the system.

The Internet services currently used are e-mail, chat, listserv and web. The services were selected according to the availability of technology for users and the goal of the programme. Due to the specific focus on IT, use of the Internet and the access to it is mandatory. The course content is put on a web-based working interface. E-mail, chat and listserv are used to establish communication among the participants (teachers, students and the administration team). These are also used to share academic and non-academic information. The chat service is also used to reach agreement among the participants on emerging issues. The web is used mainly to share content in each course; during the first year only the information on the website was used as a backup for printed materials. On rare occasions, the telephone is used to contact students who have not been active for a while.

The programme currently uses a commercial distance-education environment called Learning Space. In selecting the new electronic environment, nine tools were assessed. From this group three were pre-selected and fully reviewed – WebCT, Learning Space, and FirstClass with Macromedia Solution for e-learning. Learning Space was selected because of its potential for implementing the instructional design defined by the programme. The use of Learning Space generated new ways of collaboration and opened up new means of communication. Current students find this environment offers them informal spaces to share spare time, administrative information, a help desk, and a collaborative workplace to exchange ideas on coursework and assignments.

For the earlier version, a special environment was developed and communication was mainly by e-mail. The course material was available through this web-based interface, and printed material was sent by post. Soon the staff realised that teachers were not using the web environment much, and there was little interaction. Therefore, it was decided to put just the course content on the web. This reduced the use of e-mail, and increased the use of the communication tools provided by the system (electronic blackboard, discussion group and news) as a way to promote collaborative work on the web platform. A problem with the use of e-mail was that it was difficult to control the

process of assignment sending, resulting in misunderstandings between tutors and students. Students who experienced the change reacted positively to it. Latter generations of students have also expressed positive views of the new web environment. By contrast, assessing the environment as a communication tool, instructors indicated that they preferred e-mail for participating/communicating within the courses.

Having its own website allowed great flexibility for customising the programme to teachers' and students' needs. On the other hand, every course had to be developed from scratch, which is very time-consuming. The administration therefore decided to use commercial software. Before the introduction of Learning Space, instructors had to prepare the material one month before the beginning of the courses. The information already prepared was passed to engineers to be published on the website. Today, with the introduction of Learning Space, instructors must upload the materials by themselves. The programme team suggests doing this two weeks before the course begins. However, this gives rise to a new problem – the revision of learning materials by the programme team. In general, assessment shows that teachers are very pleased with the environment; not so much the staff, who have experienced some difficulties in combining the pedagogical model with the system logic.

Today, students must have access to the Internet, Internet Explorer 4.5 or Netscape Communicator 4.5 and an e-mail address in order to participate in the programme.

Programme Costs

The programme is funded exclusively through student fees. The programme cost per student is US$ 860, which represents around 10 per cent of a teacher's salary. It is interesting to note that 3 per cent of the students are fully supported by their employers, and another 5 per cent are partially supported by them. Most students pay monthly. On quitting, students must continue to pay the fees for the current term. A small proportion of students, usually those supported by their employers, pay the total amount at the beginning, receiving a discount of 10 per cent.

An important problem observed is that students are not good at paying. Disregarding those students who pay all the fees at the beginning and those students who quit, the amount of fees owed is almost 50 per cent. This situation improves towards the end of the programme, since students must pay in full in order to get the Diploma. Despite passing all the courses and the final work, a few students never receive their certificate because they have not paid the full fees.

The following is a description of identifiable cost inputs of the programme. These costs are summarised in Table 9.5. Since the programme is run in conjunction with other academic programmes, there is a lot of cost sharing. In cases where this occurs, only a portion of the total cost has been allocated, based on the number of students on the programme, the number of courses, the number of teachers or the course duration. For calculating annualised financial capital cost, a discount rate of 12 per cent was used. This is the discount rate used by the government to evaluate social projects.

Fixed Costs

Fixed costs include course and materials design, facilities, equipment, evaluation, software, personnel, contracts, marketing, telephone and Internet access.

Materials Design

The pedagogical model used by the programme dictates that each new and updated course is the direct responsibility of between two and six members of the teaching staff. Once designed by this group, a course has an estimated shelf life of three years before having to be completely redesigned. Nevertheless, during that period the course has to be updated and slightly modified each year. The programme staff estimate the amount of time needed to design a course to be 0.8 full-time working months and half that time for updating. In other words, 150 person-hours are needed to design a course and 75 person-hours to update one.

Since people working on one design team have different professional backgrounds and positions inside the institution, the actual cost differs from course to course.

Facilities

This item includes offices used by the personnel, workspace for tutors, room for the servers and furniture in one location. The calculated cost corresponds to the proportion of time facilities are used for programme activities. Contingency was estimated at 2 per cent.

Equipment

Two servers are used for the courses along with the necessary software. There are six computers for the use of the personnel of the Teaching Unit, plus two computers available for tutors' use. This item also includes some peripherals (printers, scanners, cameras, and so on.). In the case of equipment, contingency was calculated at 5 per cent.

Evaluation System

For assessing the programme, five different electronic surveys where designed and implemented on the web for students to respond to. This system is re-used each year.

Software

For the Virtual Learning Environment (VLE) to work, two applications are needed. First, a platform for building the VLE and its interface with the users is fundamental. Second, for instructors, tutors, administrative staff and technicians to be able to modify the VLE, some site licenses of a special software are needed. Additionally, annual licenses for each user must be paid for them to access the VLE. This item appears under variable costs. The cost of productivity software (Windows and Office) is included in the cost of personal computers.

Personnel

Instructors are paid different amounts according to the duration of the courses. There is a maximum of 30 students for each tutor and tutors are paid US$ 8.42 monthly per active student in their group. There are six members of the programme administrative staff, each of whom has a specific responsibility – general coordination, academic coordination, logistic coordination and records, evaluation, course design coordination and academic staff development coordination. Since salaries are all different, only the total amount is presented. The programme pays the IIE for the hours its professionals dedicate to the course design team. Since every salary is different, the actual cost for each course is different. It is important to note that this payment is part of the normal

salary of an academic, in contrast with the payment for teaching a course, which is extra money for the individual. Finally, there are two university students who help with administration.

Contracts

The Teaching Unit subcontracts some functions to other units of the IIE. First, since the programme uses a web-based working environment, there is a web hosting service. The infrastructure is designed to ensure an availability rate of 99.4 per cent for the students. This raises the cost of this item dramatically. Second, due to the nature of the programme, students, teachers and staff require technical support for their hardware and software. The Technical Support Unit provides this service. Third, accounting and fees collection is done by the Administrative Area.

Marketing

A small promotional campaign is carried out each year to ensure sufficient applications. This mainly involves advising in newspapers, school visits, website banners and e-mail messages.

Telephone

Since most of the tutors work from home, each of them is paid US$ 15 per month, for 10 months, to cover telephone charges related to distance tutoring.

Internet Access

Tutors access the Internet from home, through the university service. US$ 3.8 per tutor per month for 10 months is paid to the University, and each tutor is paid US$ 15 a month for 10 months.

Others

From the programme accounting records, an amount of US$ 2,567 for other indirect costs was identified. Items considered here include insurance, electricity, water, and so on.

Variable Costs

These include supervision of students' final work, reproduction of written materials and correspondence.

Supervision of Students' Final Work

At present, supervision of students' final work is not paid for, and is considered part of the work of the IIE's academics. However, the shadow price of this item was estimated, in conjunction with the programme director, at US$ 210.53 per project. The final work is done in groups of two to four students, and there are on average 25 final work reports. A supervisor and another faculty member assess each final work report. This is not paid for at present, but the estimated cost of assessing each final report is US$ 38.28.

Reproduction of Written Materials

*M*any written materials must be reproduced in quantities more or less proportional to the number of students participating in the programme – for example, final work evaluation guidelines, reports, printed copies of students' assignments, printed copies of final work reports distributed to the evaluators, and so on.

Correspondence

Although in a minority, some information, especially administrative, is mailed to students.

Table 9.5: Cost Breakdown for Diploma in Information Technology

Cost category	Item	Useful life (years)	Unit	No. of units	Average unit cost (US$)	Investment cost (US$)	Annualised or annual cost (US$)	% of total
INVESTMENT								
Facilities	Offices	15	Set[1]	1	4,358	4,358	640	0.8
	Furniture	10	Set	2	902	1,805	319	0.4
	Contingency and other	10	2 % of facilities	1		123	22	0.0
Equipment	Servers	5	Unit	2	2,500	5,000	1,387	1.7
	Computers	5	Unit	6	1,000	6,000	2,219	2.7
	Peripherals	5	Set	1	1,000	1,000	277	0.3
	Contingency and other		5 % of equipment			280	78	0.1
Subtotal facilities and equipment							4,942	6.1
	Evaluation system	5	Instrument	5	263	1,316	365	0.5
	Initial learning materials production	3	Course	13	1,036	13,463	5,605	6.9
Software	VLE site licenses	3	Unit	5	49	245	102	0.1
	VLE development platform	5	Unit	1	897	897	249	0.3
Total investment							11,264	13.9
FIXED RECURRENT								
Personnel	Teachers		Academic staff	1	4,737		4,737	5.8
	Course design teams		Team	13	518		6,731	8.3
	Staff team		Set	1	23,713		23,713	29.3
	Helpers		Person	3	401		1,203	1.5
Contracts	Technical support		Contract[2]				1,328	1.6
	Web hosting		Course	13	312		4,057	5.0
	Accounting		Contract				1,904	2.3
Promotion	Marketing		Campaign	1	1,917		1,917	2.4
Telecommunications	Telephone		Lines	6	180		900	1.1
	Tutors' Internet access		Tutors	6	38		226	0.3
	Office supplies						528	0.7
	Computer supplies						56	0.1
	Other indirect		Set	1	2,567		2,567	3.2
Total recurrent							50,050	61.5
Total fixed							61,133	75.4

VARIABLE[3]								
	Tutoring		Seats	940	8.42		7,916	9.8
	Final work supervision		Groups	25	210.53		5,263	6.5
	Final work evaluators		Groups	25	38.28		957	1.2
Learning materials	Reproduction		Students	170	2.15		366	0.5
Correspondence	Distribution		Students	170	9.84		1,673	2.1
Software	Licenses		User	170	22		3,740	4.6
Total variable							19,915	24.6
TOTAL							81,046	100

Observations and Assumptions – Table 9.5

- When no common unit could be identified for the different components of an item, the unit considered was the whole set.
- Units described as contract are sub-contracted by the programme to other organisational units and may include infrastructure, personnel, equipment, and so on.
- Variable costs were calculated assuming a total of 170 students – 100 from one cohort (taking courses) and 70 from the previous cohort (doing final work).

Table 9.5 contains the total cost generated by the two cohorts in one year. This is the equivalent of calculating the cost of one cohort for the whole period (15 months).

According to the programme archives, a total of US$ 37,874 direct costs were identified. The same accounting records showed that there were US$ 61,764 in costs related to different initiatives concerning all the academic programmes run by the Teaching Unit. Using different criteria (number of students, courses, teachers or hours) each cost item was pro-rated between the different programmes, giving a total of US$ 43,173 indirect costs for the Diploma.

Due to the existence of subventions from the institute (such as final work evaluators' time, electricity) and the fact that the VLE platform was donated, it was necessary to value these items and calculate the hidden costs that the programme accounting does not reflect. The calculation gave a total of US$10,411 hidden costs.

Cost Comparison With the Conventional Sector

The IIE used to run a parallel face-to-face version of the distance programme, which the research team used for cost comparison purposes. Although the average cost per student of both versions is almost the same, the costs components of the two programmes vary. The distance version requires software and hardware (VLE platform and servers); distance tutors (and related costs: telephone lines, software licenses, Internet access); and web hosting. The conventional version, however, requires much more local infrastructure, a computer laboratory and meeting rooms.

Personal Cost for the Students

The personal costs for the students are mainly fees. Fees are US$ 860 for the whole programme, which they can pay in 14 instalments of US$ 57 plus an initial payment of US$ 62. Stationery costs are around US$ 23. Depending on how they access the Internet,

the telephone bill (Internet service included) could cost around US$ 15 per month. Students generally work at night so there is not lost income to be considered.

Breakdown of Cost Elements

In general, the breakdown of costs seems rational. It is not clear if the decision to have a group of four to six professionals designing and updating each course is appropriate. On the one hand, it is coherent with the pedagogical model of the programme and the interdisciplinary composition of the IIE. However, it involves a much higher cost than the other similar option in the national market.

We found four possible sources of sustainability problems. First, the only source of income is student fees, except for some shadow costs assumed by the IIE, and students are not good at paying. In many cases they quit the programme without paying the last five or six months' fees. A more rigorous system for collecting fees was due to be implemented soon after this report was written. Second, Table 3.3 shows that 75.4 per cent of programme costs are fixed and only 24.6 per cent are variable. It also shows that staff costs are greater than the total variable costs. This could represent a serious sustainability problem in the future. Third, final work guidance and assessment is considered part of the duties of each IIE member involved in the programme. Since there is no obligation or incentive to perform this task, in practice it has became voluntary. Therefore, every year it is getting harder for the administration to find volunteers for these activities. Eventually the programme will have to start paying for people to take on these roles, and this is likely to make current fees unsustainable. Finally, at present the programme is exempt from the software license payment due to a special agreement between the IIE and the software provider. This will be difficult to sustain over time.

Outcomes

This section begins with a comparison of the distance programme with a face-to-face version of the programme looks. It goes on to look in detail at issues of accessibility, effectiveness, impact, efficiency, acceptability and relevance.

Comparison With the Regular System

The IIE has been running an equivalent face-to-face version of the programme since 1995. The nature and educational background of the participants are the some for both programmes, except that the participants on the face-to-face programme come only from the geographic region around Temuco. For the face-to-face programme it is not compulsory to have access to the Internet access and a computer.

A sample of instructors interviewed who worked on both programmes reported some other differences. First they noted the immediate interaction and response students get in a face-to-face situation versus having to wait for the electronic reply of the others, sometimes for more than a day, on the distance programme. Second, distance students develop a network communication culture through their constant use of the virtual working environment. Even though the face-to-face students had some IT tools, they do not get to develop a real network communication culture, thus using electronic communication resources much less than the others. Third, in terms of quantity and quality of content, the staff felt the two programmes were almost the same. The same group of professionals

works on the design of both versions, and there are the same courses in both modes. Some people interviewed reported that some instructors participating in course design have a strong bias against distance education, but we did not find evidence that this was reflected in the quality of the different courses. Fourth, the systematisation of course production and complete definition of every content and activity before the start of the course was necessary for the distance version, whereas, theoretically, a face-to-face teacher can make a modification to class while teaching it.

Finally, both versions have a similar total cost, but different input structure. The staff think that there is the perception that the initial investment was higher in the distance version, but that this is because in the case of the face-to-face version the technological classroom was already built when the programme started. Another inaccurate perception is that the marginal income per student is higher for the distance version – according to the staff that is not true because in the face-to-face version there needs to be one tutor for every 30 students.

Accessibility

To access the distance-taught programme, eligible students need to have Internet access, a browser and an e-mail account. Therefore availability of the programme depends on students' access to the Internet at home or at work. The web-hosting service ensures a 99.4 per cent availability of the VLE. All assessments performed showed that the VLE is quite easy for the participants to use. To reinforce this, all the students receive a previous course to teach them how to use the system, communicate with others, download articles, review the content, send assignments, and so on.

Learning Space provides several advantages over the old system, such as data organisation, but also has a number of critical constraints. Problems related to the management of the tools, student administration, the course generation process and the grading system were reported by the administrators. The most critical concerns are the lack of transparency to students and administrators, the inability to search information and the difficulty of introducing any kind of learning activity that does not correspond to the logic of the solution.

The main restriction to accessibility is possibly affordability. As previously mentioned, the programme cost represents almost 10 per cent of a teacher's earnings. It was difficult to get a clear picture about affordability for students, but it is a fact that the programme has problems making the students pay their fees.

Effectiveness

The information in this section was gathered by reviewing the programme's records, and by telephone interviews with a random number of students in each cohort (1997, 1998, 1999, 2000) and their headteachers. Telephone interviews were carried out to get information about effectiveness including knowledge acquired in the programme, changes in teaching practice, recognition by stakeholders, quality of the learning process, quality of the technology used and time invested.

Since 1995, with the national expansion of the Enlaces project, a large number of computers have been installed in Chilean schools and the need for training in IT has increased. This programme was the first to be implemented in Chile in the field of educational technology.

Because of this, in 1997 a large number of students were interested in studying the programme. This initial enthusiasm, combined with a lack of previous knowledge about the methodology and Internet tools, were the main reasons identified for the high dropout rates.1997 presents some problems, mainly due to the lack of documentation; it was impossible to get the actual data about the number of students initially registered. Also, the 2000 cohort is still ongoing at the time of writing; therefore, all the data is not yet available. Table 9.6 shows the number of students involved in the programme.

Table 9.6: Number of Students by Cohort

	1997		*1998*		*1999*		*2000*	
	No.	*%*	*No.*	*%*	*No.*	*%*	*No.*	*%*
Graduates	22	25.29	51	45.95	24	41.38	n/a	n/a
Failures	0	0.00	7	6.31	0	0.00	n/a	n/a
Dropouts	65	74.71	53	47.75	34	58.62	23	16.91
TOTAL	87	100.00	111	100.00	58	100.00	136	n/a

Achievement of Stated Goals

Participants widely recognised the good quality of the programme; they also indicated a high achievement of goals proposed at the beginning of the programme. The main contributing factors noted were the use of new tools and Internet services. The use of an innovative methodology to implement the activities was also mentioned. Among the strategies well perceived were the use of collaborative work, the use of project methodology as a strategy to organise an innovative idea, and the communication among participants to reach the goals and to implement the activities planned.

In general, the educators participating in the programme were enthusiastic about the acquisition of pedagogical and information technology knowledge, not reporting differences among the students interviewed each year. It is interesting to note that some students expected more technical knowledge, even though the programme's profile openly declares the pedagogical orientation of the courses.

Finally, a high percentage of students indicated that headteachers and administrators were not involved in their decision to pursue the programme. In some cases the energy and effort put into the programme was not economically considered or economically compensated.

Recognition and Assessment by Different Stakeholders

Headteachers perceived the qualification obtained by their teachers as a contribution to their work, and to the work of others teachers at the school. Headteachers think that it is vital to be updated in any discipline, but most important in IT, due the Enlaces project. They reported that a few teachers have implemented 'specific technology workshops' to spread their knowledge to their colleagues at school. This has been very well received by the school community, which sees a direct benefit of the training. It is interesting to note that some teachers have taken on more senior positions in their schools – for example, as head of the information technology unit or the school computing project.

Criteria for Assessment of Quality Teaching and Learning

The quality of teaching in the programme is assessed using online surveys and telephone interviews. Online surveys are used for each course; telephone interviews, on the other

hand, are used annually to get the overall perception of the programme. The programme team interviews by telephone a certain number of students to get feedback about the quality of teaching in each class. The information is analysed by the whole programme team and carefully processed. The findings obtained are sent to instructors for revision and comments. After completion of this process, the teaching process is modified. This circular methodology has been crucial for the improvement of the programme.

Instructors on each course assess the quality of learning, using guidelines provided by the programme staff. These guidelines specify the use of frequent feedback, the use of a clear grading system, and the need for special assessment consideration for the incremental construction of knowledge (mastery learning). Among the strategies to assess students' performance, besides the traditional faculty assessment, are the use of self assessment and peer assessment. Peer assessment is implemented through collaborative work. New tools have also been incorporated into this process in order to build new knowledge – conceptual maps, online discussions, case studies and projects. Given criteria are considered by the instructor as a guideline; the criteria are not mandatory because the programme team does not want to force the implementation of a rigid assessment system.

Criteria for Assessment of Quality of Learning Materials

The learning materials were developed by a number of different instructors. After their creation, the programme staff review these learning materials to ensure consistency. Two checklists are used to assess the quality of learning material. One is related to the formal aspects of the course, ensuring that each item is designed according to the instructional design used by the programme. The other checklist covers the pedagogical model of the programme. One of the limitations of the model is that after the first revision, the material is not reviewed again to double check if the changes suggested by the team have been fully implemented. The direct responsibility for improving the material lies with the instructors; it is not compulsory to implement the changes, as the instructors have the freedom to make their own decisions. This is because the experts are the instructors, not the programme team. Finally, it is interesting to note that materials are updated annually, increasing their content and quality.

Appropriateness of Media and Technology Choices

The technology was well perceived by instructors and students. The possibility to use different Internet services to reduce the distance barrier was perceived positively, but students expressed the need to meet face-to-face with other participants to understand better the context. Access was not a problem – each student had to solve this issue individually. Chile has a strong communications system that allows Internet access in all urban areas. Home access is complemented by the access that schools provide using the Enlaces network. The students did not report cost as a limiting factor during the telephone interviews.

Comparisons With Conventional and Other Alternatives

The distance-education version of the programme was developed based on the experience and criteria used to build the face-to-face version. Therefore, the number of credits and workload are the same, and are equivalent to any traditional post-graduate programme in Chile. The number of hours required for studying and completing assignments is the same

as the traditional programme. The courses are equivalent and can be considered as transfer work by other institutions, though this depends on the institutions involved.

Impact

Impact was assessed using telephone interviews. The specific points covered were changes in pedagogical practices, increase in personal knowledge and students' knowledge, salary increment, new positions at work and general changes in participants' daily life.

Changes in Attitudes and Practices of Individuals

A few students reported changes in their pedagogical practices. This was mainly due to the content acquired in the courses, and the methodology experienced by students. Others reported an adaptation of their practices towards new roles or positions at schools and universities. A high percentage of students reported changes in the use of technologies for teaching, mainly due to the acquisition of new teaching methodologies.

Changes or Improvement in Knowledge and Skill Levels of Target Groups

A large number of students indicated a high level of acquisition of new skills and knowledge in topics like web page implementation, educational software and Internet services. Changes in skills include technical information technology skills and educational skills.

Changes in Work-place Performance

A few students also reported changes in work performance, especially those students who work in schools where the Enlaces project is underway. Many teachers indicated that they are now working as technology coordinators. No specific information was gathered about these changes, and the programme does not have a follow-up system to assess impact.

Improvements in Quality of Life

No report about improvement in quality of life was found. The programme is not related to that issue, or that issue was not reported as significant by the students interviewed.

Efficiency

Efficiency was also measured using telephone interviews. The main topics considered were use of resources, use of the tools available, communication with and perception about tutors' work.

Of all the resources – web-based working environment, e-mail and chat – the majority (81.8 per cent) of the students interviewed said that they use mainly the web and e-mail. The chat service was reported to be a less-used resource (45 per cent). This was because the service was not available all the time, and even when it was available it was quite unstable. Also noted was the cost involved in a long conversation at certain hours. There are no data available about the number of hours spent by the students on these activities. One student mentioned that they preferred to use MSN (Software MSN Messenger) as a more robust alternative: 'We used to use MSN with my group, we would previously agree on a time and we would meet up there …'

With respect to the human resources available in the programme, most (81.8 per cent) of the students interviewed indicated that there was a frequent and fluent communication

with their tutors in each course, which constantly motivated them. In addition, they mentioned that they went to the tutors when they had a problem with the activities or the content. One student said 'I needed them [the tutors] frequently and their responses were adequate, reinforcing and motivating …'. In contrast, another student said he would have preferred a face-to-face tutor: 'I tried to communicate the most I could with them, but due to the lack of time when I actually contacted them, I was left with the feeling that something was missing; maybe if we had been all together things would had been different'. Another student mentioned the differences between tutors: 'There were some quite kind tutors, who frequently invite you to contact them and their answers come quickly; in contrast others were more absent, especially in the final elective courses'.

In addition, some students (18.2 per cent) added that they had an excellent relationship with the administrative staff, who solved their occasional problems efficiently.

Acceptability

Acceptability was also measured using telephone interviews. The main points in this topic were stakeholders' perceptions about the quality, reputation and relevance of the IIE and the programme in contrast to other programmes.

Degree Qualification Acceptance

Seven headteachers were interviewed about the role of graduates of the programme, and were found to value their employees getting this kind of training. One school headmaster mentioned: 'It is a very powerful tool and it would be a big contribution for our school, students as well as teachers, that one gets to apply the knowledge acquired during the programme'. In general, headteachers value the acquisition of this kind of degree, but they do not have any position or clear perception about the quality of the University of La Frontera. The University is an independent public university founded in 1981. Formerly it was a regional branch of the University of Chile, the foremost educational institution in Chile. For the instructor and the programme team, the key issue is that the programme be registered as an advanced training programme in the National Public Training Record.

Finally, it is important to indicate that the programme does not lead to any title or award. Another important point is that the official teachers' union in Chile (Colegio de Profesores) does not have a position about distance education programmes.

Equivalence

In terms of salary increment due to completion of this Diploma, it is the same as a similar face-to-face programme. In many cases, in particular in public schools, teachers receive a salary increment for completing this kind of programme. This increment represents an average of three per cent of the teachers' regular salary. The maximum amount for this increment is 15 per cent; hence with five diplomas a teacher can receive the maximum amount. There is no public data available about the number of teachers with further training.

Reputation and Perceived Value

There is a strong perception about the importance of acquiring IT skills. The programme has recently increased its recognition in the field, but does not have a national reputation. Most of the teachers interviewed consider it valuable to have completed the programme. In addition, the majority think that their employers, as well as their colleagues, value the

fact that they possess the Diploma. Nevertheless, a minority also said that their employers did not recognise that they actually had the qualification. One student did not consider it important to have done the programme as he felt he did not learn anything new.

To get more insight into the programme's reputation, a few headmasters were also interviewed. A large number of them indicated that the Diploma itself was more important than the reputation of the IIE. Three headmasters indicated that the acquisition of the Diploma at the University of La Frontera was very important due to the good reputation of the institution.

Most students consider the programme to have good reputation because of the institution running it. When one student was asked the reason for this good reputation, she answered that it was because of the connection between the Enlaces project and the IIE (many of the programme teachers are part of the team that conceived and implemented the early stages of Enlaces project).

In contrast, one student said that he had entered the programme after reading a newspaper advertisement, 'but I did not like it, therefore it did not leave a very good reputation in my school; in fact I recommended a couple of colleagues not to take it'.

Relevance: Needs Fulfilment

When asked about their satisfaction with the programme, most of the students indicated that the programme fulfilled their expectations. Many teachers interviewed agreed that one of these expectations was to reinforce or acquire knowledge to apply to their professional practice. They also mentioned the need for updating their knowledge. Two students mentioned that the training added value to their curriculum vitae. One of them said 'this Diploma gave me a more professional knowledge about the topic that will allow me to have access to other professional fields, and gave me a new speciality in the educational field'. The other said 'I entered the diploma to be able to keep my job. I am a mathematics teacher, but since 1993 I have concentrated on teaching computing classes. Here, (in Iquique City) in schools, computer laboratories are being closed due to lack of funds … they are making people redundant … now with this [the Diploma] my quality of teaching has improved. I learnt a lot. I obtained good materials ...'. Another student said that other professional needs were fulfilled: '… it was useful to implement the computer lab in my school'.

Two teachers said that their expectations about learning more about computing were not satisfied. 'I entered the diploma because I like computing. I was self-taught and wanted to validate what I knew. But I expected more computing; there was much to read, it was not what I expected'. This corresponds to what the staff said about the programme having a more educational profile, and that the goal is for the teachers to learn how to use computers as specialised users but not as programmers. Finally, it is interesting to note that the programme does not have any system to follow up students in their workplace.

Conclusions and Recommendations

The programme studied is the only distance-education teacher-training programme in IT in Chile. Nevertheless, there are six face-to-face programmes. The potential demand is quite great, considering that almost every school is introducing IT to support curricular

activities. People seem to prefer this programme due to the link with the Enlaces project and the flexibility of distance learning.

It would have been useful to get data about the performance and impact of the students in their workplace. The main constraint for researching the programme was the lack of an organised database with information about it. Even though the staff were open and willing to help, they did not have an easy way of getting some of the information, and in some cases their memory was the only source available. The Teaching Unit is now designing a database.

The research team feels that the following areas need to be improved in order to ensure the sustainability of the programme:

- information management
- services for international students, considering cultural and language issues
- system for controlling student payments
- reduction in fixed costs of the programme.

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figure is expected to decline in the future as the education budget shrinks and current economic difficulties continue. Though ranking as a low-income developing country, Mongolia has some features more usually associated with developed countries, for example, a widely dispersed, mostly literate and nomadic population, a good basic infrastructure of social services (health and education), and a well-developed transport and communication system in the past.

Political and economic transition

Mongolia became the second communist country in the world (after Russia) in 1921 and was strongly linked to the Soviet Union until 1990, when it became an independent democracy. The early 1990s were a time of rapid political and economic transition from a centrally planned economy to a market economy, from a one-party state to a multi-party democracy. This shift of ideology, coupled with the withdrawal of Soviet support and subsidies (estimated at about 30 per cent of GDP in the 1980s), plunged the country into a severe economic crisis. Industrial and agricultural production fell sharply, inflation rose steeply and unemployment increased. The effects of this are still being felt. The transition from one kind of political and economic system to another, the move towards privatisation and a market economy, has had a profound effect on people's lives, and produced 'losers' as well as 'gainers'. The social consequences included the appearance (or the greater visibility) of poverty, unemployment, rising crime, homelessness and street children. The proportion of the national budget allocated to the social sectors fell in real terms during the 1990s, reducing the quantity and quality of services, at a time of increasing need. Though the economy began to stabilise by the mid-1990s, the pace of change slowed and in some respects was reversed. A series of natural disasters and harsh winters (the most recent in 1999 and 2000) pushed more of the already vulnerable rural population into poverty. By 1998, about 36 per cent of the population were living below the poverty line, most of them women and children (UNDP, 2000).

Impact on education

The transition to a market economy has had both positive and negative effects on education. On the positive side, schools were decentralised and given more autonomy, the curriculum was reformed and liberalised and new kinds of provision emerged (for example, private schools). On the negative side, the education reforms of the early 1990s were accompanied by a sharp fall in

has declined to some extent with the impact of economic transition. Mongolian is the first language of most of the population, though there is a minority of Kazakh speakers in the west.

Table 10.1: Mongolia: National Data

	Primary	Secondary
Population (millions)		2.5
Size ('000 km^2)		1,567
GDP per capita (purchasing power parity US$)		1,711
Human Development Index		0.569
Educational data	*Primary*	*Secondary*
Teaching force	7,587	13,171
Total '000		
'000 female	6,812	8,686
Gross enrolment ratio		
All students	88	56
Female	91	65
Pupil-teacher ratio	31	15

Source: UNDP, 2001; UNESCO, 2000; UNESCO, 2001; Note: population, size, GDP, and HDI figures are for 1999; education figures are for 1996.

The country has a weak communications infrastructure, with limited telecommunications and few surfaced roads. Travel within Mongolia is by horse, camel, motorbike and car. an east-west railway line across Mongolia runs from Moscow to Beijing, and a few other lines link Ulaanbaatar to the two other large cities. A limited domestic air-service operates between Ulaanbaatar and some of the provinces, though services are often affected by weather conditions and economic constraints. Radio ownership is estimated to be 139 per 1,000 people, television sets 63 per 1,000, one mobile phone per 1,000 and seven or eight computers per 1,000 (World Bank, 1999). The Internet became available in 1996 though its use so far is limited and access expensive. By March 1999 there were 2,100 registered Internet account users (mainly in Ulaanbaatar) and two Internet Service Providers. The monthly cost of an Internet account in 2001 is equivalent to an average monthly salary.

From being a feudal society under the dominance of Manchurian China, Mongolia developed into a socialist state from 1921 onwards, assisted by Russia. In 1924, it was the second country in the world to become communist and a centrally planned economy began in the 1930s. 70 years of communist socialism saw a huge improvement in the country's development, health and education for the rural population as well as the urban. During this period the country's economy was transformed from a nomadic agricultural one into one with an industrial sector, producing semi-processed raw materials (mainly copper and cashmere). In the 1960s there was a major drive towards industrialisation and a large increase in the urbanisation of the population. Until 1990, Mongolia had a close association with the Union of Soviet Socialist Republics (USSR) though it was never a constituent republic. Soviet subsidy contributed up to 30 per cent of Mongolia's GDP. Russian influence was considerable in all aspects of life, including education; Russian was a compulsory second language and the Cyrillic alphabet replaced traditional Mongolian script. The growth of the Mongolian economy continued until the mid-1980s when it began to fail, affected by changes in Russia and the Eastern bloc. A peaceful overthrow of the government in 1990 led to elections and a democratic constitution.

Economic, Political and Social Transition

Since 1990, Mongolia has undergone an economic and political transition from a command economy to a market economy and from a single-party communist system to a multi-party democracy. The withdrawal of Russian subsidies and dissolution of the Eastern bloc's Council for Mutual Economic Assistance (CMEA) had a huge negative impact on Mongolia's economy. As a result, GDP declined each year between 1990 and 1993, resulting in a cumulative loss of 22 per cent of output. Growth returned from 1994 to 1997, but still left GDP 10.7 per cent below its 1989 level in real terms (Government of Mongolia NSO, 1997 and 1998). By 1997, annual GDP per capita was US$ 394 (World Bank, 1999) though alongside this existed a large unofficial economy. Inflation rose sharply, reaching 325 per cent in 1992 before reducing to 17.5 per cent in 1997. The exchange rate against the US dollar fluctuated from three Mongolian tugriks in 1989 to over 1,000 in 1999. In 1996 alone there was a 60 per cent increase in energy prices. Price increases have been huge and wages have failed to keep pace with inflation, leaving government employees (such as teachers) with rapidly declining incomes. Government estimates put prices at 70 times higher in 1996 than in 1990, though an independent analysis claims they were 150 times higher, with wages in the state-funded sector increasing by only 22 times (Sodnomdorj, 1997). In either case, the real income reduction was extremely large. Income inequality has increased greatly in a country where wage differences were previously small because of the compressed wage-scales typical of socialist economies.

The social costs of transition have been high, borne unevenly by different groups within Mongolia's population. Social inequality has grown. Unemployment has appeared and social indicators such as school enrolment, maternal and infant mortality have declined. Poverty, a new phenomenon in Mongolia after 1990, has risen rapidly: it is estimated that at least 36 per cent of the population now live below the national poverty line. Health, social welfare and education services have been cut. The position of women in Mongolia has deteriorated, with higher unemployment rates and greater job insecurity; cuts in maternity care, social services and child support; and reduced representation in parliament and other decision-making bodies (Robinson & Solongo, 2000). Life expectancy rates have reduced, particularly for males, and alcoholism, domestic violence and crime have increased. Street children have appeared as a new feature of Mongolia's urban centres.

Against this background, education has undergone major changes, further influenced by structural adjustment policies and the conditions of obtaining international grants and loans.

Education in Socialist Mongolia

During the socialist period (1924-1990) large advances were made in education despite low national income. These achievements included the rural population everywhere, despite the country's huge size, harsh climate and small, dispersed population. They led to Mongolia's having human development indicators (for literacy, education, female participation and health) higher than would be expected for its annual per capita GDP.

A basic education of eight years of schooling was provided for the whole population, and education was made compulsory for all children in 1925. Thereafter education expanded, financed by the state and provided free to students at primary, secondary and tertiary levels. Pre-school education, though not free or compulsory, was provided on a

large scale during the 1980s, in the form of c rèches and kindergartens as part of the social services to support female participation in the labour market. By 1990, there were 408 kindergartens (out of a total of 909 pre-school facilities) for 97,212 children (NSO, 1998). In 1992, Mongolia allocated 21 per cent of its education budget to pre-school education (an unusually high proportion), 55 per cent to general-secondary education, seven per cent to vocational-secondary, and 16 per cent to higher education (Asian Development Bank, 1993).

Children attended state-financed general primary-secondary schools from the ages of eight to 15 or 16. After Grade 8, they either left school to take jobs provided by the state or continued for two more years (to Grade 10) as a preparation for higher or further education. Each district *(sum)* had its own general secondary school. All nomadic children attended schools with boarding facilities where food and accommodation were provided free of charge by the state (9.2 per cent of all schoolchildren were boarders in 1993). By the end of the 1980s, Mongolia had achieved universal primary education, a high proportion of children completing eight years of basic education, well-resourced and widespread pre-school provision, substantial national coverage of secondary schools down to the district *(sum)* level throughout the country and a fully-qualified teaching force. By 1989, literacy rates were reported as 97 per cent and enrolment rates in education as 98 per cent for primary, 85 per cent for eight-year secondary education and 17 per cent for tertiary education (UNDP, 1998).

The Impact of Transition on Education

The most immediate impact of economic transition was a fall in government expenditure on education. From this, together with a decline in real wages and an increase in poverty, a number of consequences flowed. Enrolment rates in schools fell, school drop-out and the use of child labour increased, equity of provision decreased, the fabric of educational institutions (especially vocational training institutes) deteriorated, textbooks and learning materials became scarce and expensive, gender differences appeared in participation rates, pre-school education shrank, vocational education declined rapidly in relevance and quality, adult education almost ceased and illiteracy levels rose (Robinson, 2001). At the same time, higher education expanded rapidly, even though student fees were introduced. Private education was authorised by the state in 1991.

Before transition began, there was relatively heavy investment in education and the state carried virtually all costs. In 1990, total expenditure on education was 17.6 per cent of government expenditure and 11.3 per cent of GDP (Wu, 1994). This was high compared to other Asian developing countries (at the same time, Thailand spent seven per cent of GDP and South Korea and China spent three per cent). Between 1990 and 1992, overall government expenditure was cut by 57.6 per cent and education expenditure by 56 per cent (UNDP, 1998). Though the Education Law of 1995 set a target of 20 per cent of total government expenditure for education, this has been difficult to sustain. Government expenditure has continued to decrease sharply (Table 10.2). When deflated using the Consumer Price Index, the decrease shows a decline in real terms of 68 per cent between 1991 and 1997 (Table 10.3).

Table 10.2: Government Expenditure on Education

Year	% of GDP	% of GNP	% of total public expenditure	Per capita of total public expenditure	At 1993 (US$)
1991	10.8	11.4	22.9	9,380	31.80
1992	6.9	7.2	26.5	5,350	18.15
1993	5.8	6.2	15.6	4,265	14.46
1994	5.8	6.0	16.2	4,328	14.67
1995	5.5	5.6	15.8	4,275	14.39
1996	5.6	5.7	17.3	4,426	15.00

Source: UNDP, 1998: Human Development Report. Mongolia 19997, Annex 10

Table 10.3: Government Expenditure on Education in Real Terms

Year	Total government expenditure (millions Tgs, current prices)	Total education expenditure (millions Tgs, current prices)	Education expenditure as % of total expenditure	Total education expenditure (constant January 1991 prices)
1990	6,812.3	1,202.7	17.6	–
1991	8,929.3	2,028.0	22.7	2,028.0
1995	149,349.9	23,525.3	15.8	767.1
1997	291,221.0	44,077.8	15.1	640.0

Source: Robinson, 2001, p. 176

The Education System

The structure of the education system is 4+4+2+2-4, with children starting school at the age of eight. Plans are in hand to extend primary school to six- and seven-year-old children, if economic circumstances permit. Primary and secondary education is usually combined in the one school, with Grades 1-4 as the primary phase. 85 per cent of schools provide Grades 1-8 or Grades 1-10 education. The remaining schools provide Grades 1-4 only and tend to be small village *(bagh)* schools in rural areas. Almost all schools in Mongolia operate a double-shift system (secondary classes in the mornings, primary classes in the afternoons). In provincial and urban centres some schools have begun a triple-shift system in recent years to cope with the migration of families from the countryside.

Table 10.4: Enrolment 1998-1999

Level	Schools	Public Total enrolled	% Female	Schools	Private Total enrolled	% Female
Kindergarten		70,000				
General primary and secondary schools	609	445,851	52.5	21	1,270	51.6
Technical and vocational schools	34	11,461	55.3	4	189	71.4
Higher education institutions	33					
Post-secondary diploma level		3,764	71.4		330	53.9
Bachelor's level		40,696	61.9		18,748	70.4
Postgraduate		1,725	64.1		9	77.8

Source: MOSTEC, 1999

Primary Teachers

Most primary teachers in Mongolia are qualified (see Table 10.5) through completion of courses at teachers' colleges (for diplomas) or the National Pedagogical University (for degrees). In 1998, 41.8 per cent of all teachers were primary teachers (Grades 1-4). Of these, 21.4 per cent had bachelor's or master's degrees, 72.5 per cent had diplomas and the remainder (mostly in remote or rural areas) had an upper-secondary education (10 years) but no teaching qualification. The majority of primary teachers in 1998 were female (92.4 per cent, compared to 82.7 per cent in 1990 when economic transition began). Declining pay and living standards are the reasons given for the reduction in male primary teachers over the last ten years.

Table 10.5: Number and Percentage of Qualified Primary Teachers

	1991	*1992*	*1993*	*1994*	*1995*	*1996*	*1997*	*1998*
Total no. of primary teachers	5,672	6,165	6,292	6,662	7,064	7,562	7,679	7,679
Percentage female	84.4	90.6	90.0	90.3	90.8	89.7	91.1	92.9
Numbers qualified	5,396	5,962	5,882	6,345	6,811	7,168	7,502	7,499
Percentage qualified	95.1	96.7	93.5	95.2	96.4	94.8	97.7	96.8

Source: MOSTEC, 2000

Since 1995, primary teachers have been paid equivalent salaries to secondary teachers (before this, they were paid less). Teachers receive additional pay for marking examinations or checking notebooks and for further professional degrees. Schools have the power to adjust teachers' salaries according to workload, but their lack of funds and competing demands limit the extent to which they can do this. Mongolia had a relatively stable teaching force up to transition (a low turn-over of staff) but economic transition is likely to affect this. In 1998, 53 per cent of primary teachers had more than 10 years' experience in teaching (see Table 10.6).

Though most of Mongolia's primary teachers are qualified, remote and rural areas increasingly find it difficult to attract and retain qualified teachers now that the former practice of posting newly-qualified teachers to designated areas of need has ceased with the demise of the command economy. This had ensured a supply of qualified primary teachers around the country and in rural areas. However, teachers' salaries, though low, are still seen as worth having in the countryside where a barter economy exists.

Teachers formerly occupied a respected place in Mongolian society, but their status and pay have been eroded during transition. Their salaries, like those of other civil servants, have decreased (a teacher's salary in 1999 was US$ 25-40 a month) and within recent years have sometimes been paid several months late, causing strikes and demonstrations by teachers. The salaries of teacher trainers (in universities and colleges) are only a little higher and have traditionally been tied to the number of face-to-face teaching hours and class size, making them reluctant to change their predominantly lecture-based style of teaching. In universities, job descriptions for lecturers have not included research since research has been the responsibility of separate institutes.

For teachers in all sectors of education, their standard of living is lower than before 1990, and as a consequence many teachers have sought alternative work or second sources of income (such as private tutoring, small-scale trading or herding).

Table 10.6: Length of Experience of Primary Teachers

Length of experience (years)	% teachers
0-5	26
6-10	21
11-15	17
16-20	13
21-25	10
Over 25	13
Average length of service	10

Source: MOSTEC survey of teachers, 1998

Changing Times: Transitions in Education

Teachers have faced an uncertain and challenging work environment during the 1990s. A constant series of changes have occurred in regulations, structures, curricula, textbooks, and in the organisation of education, all faced with scarce resources. As a result, a number of transitions in education have taken place in a relatively short time (summarised in Figure 10.1).

Figure 10.1: Educational Transitions in Mongolia (Robinson, 1999)

From:	To:
• Ministry (MOSTEC) responsibility for formal education for young people.	• Extension of Ministry (MOSTEC) responsibility to include non-formal and continuing education for adults.
• Centrally planned and delivered provision.	• Decentralised planning and local provision of services.
• Education as the province of 'experts' or specialist curriculum developers at government research institutes.	• Education as meeting locally-expressed needs and legitimating local expertise and skills.
• Heavy emphasis on and high status of theoretical knowledge and low status of 'practical knowledge'.	• Broader interpretation of what constitutes valid knowledge from a widening range of sources. Increase in the status of 'practical knowledge'.
• Single form (institution-based and classroom-based teaching, provided by professional teachers).	• Multiple forms (including use of the media such as radio, self-study and local learning groups, led by members of the local community).
• Exclusion and discouragement of traditional Mongolian culture, folk-knowledge and skills.	• Revival and renewal of traditional Mongolian culture, folk-knowledge and skills.
• Teacher-centred and teacher-dependent education.	• Learner-centred and learner-initiated education.
• Densely written, theoretical textbooks with few illustrations, written for teachers as the primary audience.	• More user-friendly accessible texts, with illustrations, written for learners as the primary audience.
• State provision and funding.	• Self-help and funding by donors or NGOs (non-governmental organisations).
• A highly literate population.	• An increasing range of literacy levels, including illiteracy.
• Based on a single soviet-influenced model of education and narrow knowledge base (previously based around a single ideology).	• International influences, multiple knowledge sources and models

In-service Teacher Development

In-service professional development for teachers in Mongolia is the responsibility of the School of Educational Development (SED) in Ulaanbaatar, formerly the National Institute for Educational Studies (NIES). Curriculum specialists (known as methodologists) are based there and have responsibility for different subjects; the primary methodologist is responsible for primary teachers throughout Mongolia with counterpart primary methodologists at the provincial level. Provincial methodologists are responsible to the education centre directors, but liaise with the SED methodologist based in Ulaanbaatar. So a network of methodologists exists throughout the provinces, though the personnel are prone to change if the ruling party changes at election time. This has threatened the continuity of initiatives at provincial level, and sometimes the percentage of education centre directors (and subsequently methodologists) being replaced has been high.

Up to 1990, in-service teacher education consisted mainly of academic subject study taught in face-to-face classes (about 80 per cent of the time was spent on academic subjects and 20 per cent on teaching methodology). Groups of teachers were brought considerable distances from around the country to the capital city of Ulaanbaatar for 21 days to attend these refresher courses at the teachers' college, State Pedagogical University or SED. Before 1990, an individual teacher could expect 45 days of professional development once every five years. More than 500-800 teachers came to taught courses in Ulaanbaatar each summer. The teachers were nominated to attend, and the programme was selected and constructed by the curriculum methodologists at SED. Typically, 85 per cent of the annual in-service teacher-education budget was spent on travel, accommodation and subsistence costs since the distances in Mongolia are large. Teachers bore no costs for in-service training.

As a result of economic constraints, the reduction in funds available for education in general, and in-service teacher education in particular, became acute and the customary form and amount of professional development unaffordable. At the same time, decentralisation in the education system relocated much financial control and decision-making about professional development to the provincial level. These changes coincided with an increasing range of needs for teacher support and development and a severe shortage of information and materials for teachers (together with a paper shortage in the mid-1990s as paper became relatively unaffordable). This led to changes in the amount of in-service training available to teachers and the forms it took.

Though the face-to-face model of further professional development continues, it is on a much-reduced basis. About 200 teachers a year come to Ulaanbaatar, though now for only a week. Funds are available to provide this for an individual teacher once every 10 years. The primary methodologist organises courses of five to seven days, three to five times a year in Ulaanbaatar, or sometimes in provincial centres at their request. Whereas no certificates for participating in in-service training were provided before 1990, they are now. In 2001, 120 teachers took part in these short courses, paid for by their provinces. The focus of traditional professional development has changed. Now about 90 per cent of the time is spent on methods and about 10 per cent on academic subjects, and includes visits to other schools. A voucher system was introduced for in-service teacher education to give provincial administrations and teachers some choice about how they spent it (not necessarily with the School of Educational Development, whose monopoly over in-service education has gone). The voucher system is seen by many as

not working well, because too few can benefit and the system is neither well-managed nor systematic.

In-service continuing education for primary teachers in the mid-1990s was characterised by the following features:

- reduced government funding for education in general and teachers' professional development in particular (even no funding at some periods)
- a context of low resources and weak communications infrastructure
- a widely dispersed population over large distances, but with schools concentrated in settlement centres (districts, provinces and urban)
- a teaching force already qualified
- rapid educational change with new information and ideas that needed communicating to teachers
- new approaches to classroom teaching and new concepts (child-centred teaching, integrated subject teaching and changing curricula) being introduced through donor-funded projects and an inflow of ideas from other countries
- a traditional and unsustainable system of in-service provision, with high cost per capita, which was unaffordable in a declining economy and too slow in reaching large numbers of teachers
- a form of in-service education that spent 85 per cent of its budget on subsistence and travel, and only 15 per cent on training materials and activities
- a highly centralised education system in process of decentralisation
- few opportunities for in-service teacher education
- a shortage of paper, learning materials and information for teachers
- teachers eager to learn and with some time available (a relatively short working day in a two-shift system) but teaching in increasingly difficult circumstances.

The situation called for new approaches to the professional development of teachers and led to the funding by UNICEF of a distance-learning project for primary teachers. Distance learning was new to Mongolia at the time this project began.

Open and Distance Education in Mongolia

Open and distance education was introduced into Mongolia for the first time in the 1990s as a response to economic crisis and its social consequences (Robinson, 1995). Before 1992, there were no open- and distance-education programmes, though there were some limited correspondence courses and adult-education evening classes in population centres. (In 1980, for example, there were 3,800 adults taking regular evening classes, which often had an ideological focus, teaching communist doctrine.)

Some part-time correspondence courses were provided for teachers and others upgrading their qualifications. These usually took the form of a block of four to six weeks' face-to-face teaching and tests in the capital city of Ulaanbaatar twice a year, interspersed by periods of home study. The correspondence courses provided few or no study materials for students and little or no support for them during the periods of self-study. Students did some homework during the self-study periods, which they later brought with them to the

residential schools for marking. They received little or no feedback on their progress between residential schools.

Until 1992, Mongolian educators had little knowledge about developments in open and distance education in other countries and little contact with the global community of distance educators. Education and training were thought of in terms of traditional face-to-face classes to which students travelled. From 1992 onwards, open and distance education was introduced for non-formal education for adults and young people, for in-service teacher education and for higher-education courses. These initiatives were prompted by donor-funded projects and the influx of new ideas from interaction with countries outside the former socialist bloc of countries. The scale of operation, funding amounts and rationale for using open and distance learning varied among the different projects and have achieved varying degrees of success.

The first open- and distance-learning project in Mongolia was the Gobi Women's Project (1992-1996). This was funded by DANIDA (Danish International Development Administration) and implemented by UNESCO and the Government of Mongolia. It used print, radio, audio-cassettes, local learning groups and travelling tutors to provide non-formal education for 16,000 nomadic women in the six Gobi desert provinces. It achieved a considerable measure of success, given the unfamiliarity of distance education and the infrastructural constraints it faced. A follow-on project, *Surch Amidarya* (or 'Learning for life') began in 1997 and will finish at the beginning of 2002. This is a national non-formal education project aimed at family-based learning and marginalised youth in urban and provincial centres. It is funded again by DANIDA and implemented by UNESCO. A small pilot initiative, funded as part of a TACIS European Union project, began in the School of Economic Studies, National University of Mongolia. This aimed to replace the existing part-time correspondence course, starting with the retraining of accountants, but it functioned with very little funding. A component of the DANIDA-funded project for School Curriculum Reform was planned to make use of distance education, but although training and capacity-building took place, activities stopped at the production of self-study texts and some initial experiments with video, and the plans were not followed through. All of these relied mainly on printed materials, radio or audio-cassette and a small amount of video, together with face-to-face meetings.

Computers are so far not widely available in Mongolia, though some initiatives have been taken to establish their use. The Internet became available in Mongolia in 1996, and the country had only one Internet Service Provider (ISP) until 2000. The cost of an Internet account per month is higher than the average monthly salary of US$ 25-40. Ownership of computers is low, but increasing. Computers exist mainly in the capital city, and access is generally through institutional facilities. Outside Ulaanbaatar, computer communications depend on old telecommunications infrastructure, even if affordable.

Despite the difficulties, new initiatives in connectivity are appearing. Some computer networks linking libraries and government offices in Ulaanbaatar have been established. Attempts are being made to develop networks at university level and an 'Internet for schools' project in 1999, sponsored by MFOS (Mongolian Foundation for Open Society), provided access to the Internet for 35 secondary schools in Ulaanbaatar and subsequently for some rural schools. Computer communication is not yet a viable option for use in distance education in Mongolia, except for a very few individuals who, mainly through institutional access, are able to take part in international programmes.

The UNICEF Project for Primary Teachers: Rationale, Goals and Strategies

The use of distance education for in-service teacher education was introduced during UNICEF's Country Programme of 1994-1996, as part of UNICEF's initial activities in education in Mongolia. It was a means of meeting teachers' needs at a time when:

- traditional forms of in-service training were no longer appropriate or affordable, and a vacuum in provision existed
- new curricula and teaching methodologies were being introduced to schools
- decentralisation of educational services was taking place in the education system, needing support for the provision of in-service teacher education at provincial level
- there was a shortage of materials and information on the new curricula and methodologies (active learning, child-centred teaching and integrated subject teaching).

Distance education was chosen as a vehicle because other distance-education initiatives were beginning and it seemed to offer new possibilities for in-service teacher education. The Gobi Women's Project, funded by DANIDA and implemented by UNESCO, was already underway, and distance education was planned to be one component of the DANIDA project for the reform of the primary- and secondary-school curriculum. This offered some potential for collaboration between institutions and projects.

Goals

One aim of the first phase of the project was to learn about distance education, assess its feasibility for in-service education, train personnel for it and develop some plans. Major activities in this phase were (according to project documents):

- assessing the conditions and capacities of provincial education and the potential for cooperation
- supplying schools with tape-recorders and tapes
- involving methodologists, teachers and administrators in seminars and training two to three times per year
- producing guidelines and booklets for teachers, and broadcasting 10 radio programmes nationally and some more at provincial level.

The next phase of the project (1997-2001) aimed to build the capacity of provincial education centres to provide in-service training (using distance-education approaches) for primary teachers, and to enable them to develop the curriculum and methodology in their local context. It aimed to combine national capacity-building in programme management and monitoring with regional capacity-building, establishing regional centres for distance education in seven pilot provinces. Two objectives were to develop:

- the capacity of educational institutions at national level to manage the development of distance-education programmes for primary teachers' professional development
- the autonomous capacity of all *aimag* education centres to design and implement distance-education programmes for primary teachers' professional development.

(Source: project documents, UNICEF, Ulaanbaatar, undated.)

Strategies

The strategies for achieving the goals were formulated as follows.

1. *National capacity-building in programme management:*
    *   development of national guidelines on the use of distance education for primary-teacher development
    *   establishment of an information and communication system, with provincial education centres to distribute information and materials nationwide
    *   strengthening the capacity of the national project team in monitoring and evaluation of province-based professional-development programmes.

2. *Decentralisation and regional capacity building:*
    *   development of five regional centres for in-service teacher training, with a focus on the distance-education programme
    *   model-building of province-based in-service training units in provincial education centres to develop their autonomous capacity for in-service training with distance-education programmes in six selected provinces and Ulaanbaatar
    *   design of a mechanism for replicating the provincial in-service training unit to nationwide scale, with human-resource development of all provincial education centres
    *   professional capacity-building of provincial education centres through information and experience exchanges among provinces and with the national level.

Project Organisation

The project was a collaborative effort between UNICEF, MOSTEC (Ministry of Science, Technology, Education and Culture, referred to in Mongolia as the Ministry of Enlightenment) and SED. SED was a key counterpart to the project, being responsible for in-service teacher training. MOSTEC participated in policy co-ordination as the authority for national policy development. SED's role was to co-ordinate a working group on national-guideline development, with participation of key agencies (State Pedagogical University, Teacher Training College Ulaanabaatar, and Ulaanbaatar Education Centre). Under the supervision of SED, seven pilot *aimag* education centres were to coordinate the *aimag*-based distance-education activities for primary teachers. The project was to be coordinated closely with the DANIDA-assisted distance-education unit at NIES and other donor agencies involved in primary-teacher development.

The main funding came from UNICEF, though the salaries and institutional costs of staff taking part were carried by MOSTEC (staff in post gave their time; no special project posts were created). The Primary Curriculum Methodologist (Ms. Tsovoo) at SED became the project coordinator. Teachers and curriculum methodologists working on the UNICEF-funded project were also involved in the DANIDA-funded project to varying degrees. They participated in workshops organised, and there was some sharing in the use of the distance-education specialist working on the DANIDA project. As time went on, there was less sharing because the two projects moved at different paces in developing distance education (the UNICEF project developed more quickly) and distance education fell away from the DANIDA project agenda as other components took priority.

Curriculum and Learning Materials

The purpose of the materials was to explain to teachers new concepts in and approaches to teaching and to guide them in using them. The primary methodologist in Ulaanbaatar formed a group of methodologists and educators to develop plans and materials and to lead professional-development seminars in the different provinces. One source of new ideas was the DANIDA-funded project for primary-secondary curriculum development. New approaches to teaching included child-centred teaching, integrated subjects, more active learning methods and group work, and more focus on individual differences. Primary teachers and methodologists experimented with new methods of teaching maths, language and environmental studies, and created learning materials for use in school. They also contributed to the printed materials and radio programmes made in the project.

There was no set curriculum for the materials. One of the project's aims was to be responsive to teachers' identified and expressed needs, rather than follow a curriculum determined by central authorities. Teachers were consulted around the country wherever in-service meetings were held. Ulaanbaatar teachers were able to be more involved than rural teachers because of communication problems in rural areas. Being responsive to teachers' needs was a departure from previous practice, where the provision had been supply-driven by curriculum specialists and methodologists at the central level. The price of this responsive approach was a lack of coherence in the eventual set of materials developed over a period of time.

Printed Materials

Printed materials took the form of small booklets, some of which were linked to radio programmes (for example, the radio programme 'The five treasures of Mongolia' (see Box 11.1 at the end of the chapter) was linked to a small booklet (A5 size, 55 pages) on how to carry out theme-based integrated subject teaching in the primary school). Materials were developed by methodologists, education-centre directors, headteachers and teachers, organised and led by the national-level primary methodologist at SED. These mostly came from Ulaanbaatar, though more distant teachers and methodologists were also involved when regional seminars were held at provincial level.

Provincial methodologists worked with the SED primary methodologist to plan a year's distance-education activities and review them at the end of the year. Materials were tried out at the provincial and regional seminars, but not systematically piloted before use. The completed materials were used by both the regular and distance-education in-service programmes.

Booklets were produced on child-centred teaching, integrated subject teaching, literacy and mathematics. They adopted a different style from the former teachers' guides to the curriculum, including some features of self-study materials and aiming to help teachers to try out the approaches in their classrooms.

Media and Technology

The choices of media and technology were shaped by a combination of factors: the purposes they would be used for (for example telling, showing, illustrating or motivating teachers); their accessibility to most teachers; comparative costs of development and

delivery; and infrastructural constraints. Print and radio were the main media chosen, and audio-cassette recordings were made of the radio programmes. Some limited use was made of video-tapes and television. Computers did not play a role because they were still scarce in most areas of the country and electricity supplies not always reliable or available; in addition, connectivity was limited and expensive.

Radio

Radio was chosen because it was widely available and familiar. During the communist regime, all families (including nomadic families) were required by law to have a working radio. In provincial and urban centres, cable radio is provided to schools and public buildings. Mongol National Radio reaches nearly all parts of the country; radio signals are relayed by provincial radio stations (now increasing in number). By the time of this project, it was estimated that over 60 per cent of teachers had radios at home. Schools within the project provinces were provided with radio-cassette recorders and blank audio-cassette tapes. Mongol national radio broadcast one 20-minute project programme every month, with one repeat transmission. Two or three of the nationally-transmitted programmes were developed by local radio stations, the rest by radio producers and primary educators in Ulaanbaatar.

Programmes were also broadcast (on FM) by local radio stations: Sainshand in the Gobi Desert, Bayan-Olgii in the Kazakh-speaking west, Darkhan (one of Mongolia's three cities), Selenge, Hovd and Dornod. Occasionally, there were problems in transmission signal strength because of electricity prices and the difficulties some provinces had in affording them, but Mongolian ingenuity overcame some of the problems in these remote areas. For example Hovd provincial centre used the Mongol Telecoms channel for radio broadcasts, and teachers gathered at the post office to listen to them (this stopped all telephone communication to the province during the broadcast period), In Orchon *aimag*, because of problems with the signals, a loud-speaker was used on the roof of a school building to send programmes to nearby schools. Teachers learnt to expect the programmes on a regular basis despite local difficulties.

The radio programmes were popular and introduced a new style of programme construction and presentation. Some training was given to the radio producers and journalists on programme design in joint sessions with the primary methodologists and teachers. The programme in Box 10.1 (at the end of this chapter) was a product of the first workshop and proved one of the most popular. Whereas the previous style of radio programme had been formal and serious, often with a single speaker giving a radio lecture, the new programmes had a more varied approach, sometimes with a magazine format and with a lighter touch, adding music, poetry and traditional sayings.

There is no data available on the audience size for the radio programmes. They appear to have reached most or all of the teachers intended and a wider audience as well. Audience surveys are not generally carried out in the country and the project team did not conduct one of their own due to lack of resources and expertise. The programmes have, as their signature tune, a special song for primary teachers that is widely known in the country. Teachers who were not able to hear the programmes on radio could listen to the audio-cassette recordings of them. Although a feedback sheet was provided at the back of the printed materials, asking about the use of radio, this was not systematically collected and analysed. However, informal feedback from all provinces was positive,

even enthusiastic. Audio-cassette recordings of radio programmes were distributed on request and schools were also provided with equipment to make their own recordings.

Television and Video

Teachers were keen to have video materials so that they could see for themselves the teaching practices being described in print or through audio. However, the cost of developing and transmitting television programmes was too high to use to any large extent. Television was available in population centres, but development and transmission costs were high and access restricted. Five television programmes were made in 1998, four of them using content coming from teachers and schools. Video-tapes of these were distributed, but access to video-cassette players was limited.

The video materials were made with equipment bought from project funds, and programmes were made by project staff. The results provided content of great interest to teachers, though production quality was not high because of the inexperience of the project staff involved. The videos were not, as a result, broadcast quality. Professional video-making staff were not involved and technical assistance was not provided. The videos tended to show recordings of whole lessons rather then selected sequences, and were not much integrated with the print materials, which had, in any case, been developed earlier. Despite these shortcomings, the videos were well received by teachers and used by individual teachers and by school or local groups as part of in-service workshops. Copies of video recordings were distributed to schools and education centres, not to individual teachers.

Assessment and Accreditation

This was not a structured formal course with assessment and accreditation, but had more of the characteristics of open learning, where learning resources are provided and teachers make choices about how they will use them. There was no systematic assessment of learning in relation to the materials. Their value was judged on how much use they made of them and how much of the content was visible in their classroom practices, though this was not systematically evaluated, apart from some questionnaire data (self-report).

Funding and Costs

The main funding (about US$ 30,000 most years; US$ 60,000 in two of them) came from UNICEF, though the salaries and institutional costs of staff taking part were carried by MOSTEC, who collaborated closely. Work was carried out by staff already in post at SED and provincial education centres. There was no charge to teachers.

The project's records for managing and auditing project finances do not allow much analysis of the costs of the distance-education project. They were kept for a different purpose. It was also impossible to estimate the costs of people's time, especially in retrospect, where activities for this project were only part of their work or coincidental with it. However, some limited costs can be identified. Not all the funds to support primary education were used for the distance-education project in later years, but shared with the work on the development of a curriculum for six- to seven-year-old children. Records do not allow the amounts for each activity to be clearly identified.

The development and transmission cost of one 20-minute national radio programme with one repeat transmission was US$ 110 (Table 10.7). Taped copies of radio programmes were made and distributed. The cost of tape copies might have been cheaper per unit if this work had been contracted out to commercial copying firms (appearing at that time in Mongolia for music production). However the project team chose to have their own copying machine and to provide copies themselves. Printed booklets were produced for about one US$ 1 per copy, though the estimates of development costs vary, especially when staff absorbed the work into their regular jobs. In Mongolia, because of low income levels, the development costs of materials tend to be low and their production costs (where consumables such as paper are involved) tend to be relatively high.

Table 10.7: Cost of One Nationally-Transmitted Radio Programme (1999)

	US$
Estimated cost of methodologists' and teachers' time spent preparing the programme (the education content)	30.00
Production and transmission costs (radio station)	80.00
Total costs per programme, preparation and transmission (with repeat)	110.00
Estimated cost per teacher-listener	0.25
	(less if non-teacher audience taken into account)

Table 10.8: Cost of Audio-cassette Copies of Radio Programmes

	US$
Blank audio-cassette tapes (per tape, 60 minutes)	0.75
Total cost of copies made and distributed (2,500-3,000)	2,250.00
Audio-cassette copying machine (multiple copier)	4,500.00
Cost of copying per tape (not including electricity and staff time)	1.50
Cost of copied tape	2.25

Outcomes

The project introduced a new approach to in-service teacher education. Materials were constructed with the input of teachers and methodologists, and capacity was built in operating distance education. The printed materials still have some way to go in achieving good quality as self-study materials, and provide too small a resource so far, but they represent an important beginning. Further development is needed, but with some technical assistance: the project had too little technical assistance, resulting in limitations in materials and strategic planning, since distance education and materials development were unfamiliar.

Since there was no structured course or assessment, there are no completion and graduation rates to report. Over 5,000 primary teachers took part in project activities (and still more used the radio and print resources), though the extent of their participation is not known. There is no systematic data on the project's impact on teaching methods, but plenty of anecdotal evidence and informal reports and examples in schools around the country. The 'UNICEF Project' is well known in the country, though it lacked a clear project title.

The project began in four provinces and Ulaanbaatar in 1994, and by 2000 had reached over half of the country's primary teachers. The current funding for the traditional in-service model is only sufficient to provide a teacher with a one-week residential course

every ten years. What the project demonstrated was a new way of using limited resources. Whereas the traditional model spent 85 per cent of its budget on travel costs and accommodation, the distance-education approach spent a greater proportion on the provision of learning resources and workshop activities.

Achievements

The distance-education project for primary teachers was successful in the following ways.

- It filled an important gap in in-service teacher education in a period of acute funding shortage in the 1990s and, through this, contributed to the quality of primary teaching at a time when it was in jeopardy and in a process of change.
- It demonstrated new ways of using limited in-service funds.
- It created much-needed materials (print and radio) to introduce new curricula and teaching approaches in the absence of any other materials. Some of the radio programmes, in particular, are innovative in approach and demonstrate the value of the medium for reaching teachers.
- It reached large numbers of primary teachers, with information about the changes in primary education (the exact number of teachers varies according to different reports – 4,780 in one; 5,369 in another; and all primary teachers in a third – but is nonetheless substantial). What is clear is that print and other media (radio, audio-cassette, television or video-tapes) can support in-service teacher development for more teachers each year than the traditional in-service system, increasing access to information and materials on the primary curriculum and methods of teaching. The experience and conditions of one teacher are reported in Box 10.2 at the end of this report.
- It introduced new approaches to in-service teacher development (through print materials, radio programmes, audio-cassette and video) and more frequent participation in seminars and workshops which themselves aimed to model new approaches to managing learning.
- It involved working with teachers in *aimag* and regional seminars to identify their needs, and created relevant materials to meet them, using the seminars to stimulate teachers' interest and level of motivation, and involving *aimag* methodologists and administrators. This contrasted with the former heavily top-down approach.
- It provided equipment to support teacher in-service activities (tape recorders, tapes).
- It provided opportunities for interaction between teachers, through participation in *aimag* and regional seminars, and supported capacity-building in local in-service training.
- It built knowledge and skills about materials development for in-service teacher education and about distance education at central and *aimag* levels.

Limitations

The amount of materials developed was relatively small, and smaller than might be expected in relation to the total budget available (over US$ 300,000, according to one set of figures, minus the amount spent on the development of a curriculum for six- to seven-year olds – the sums were not disaggregated in the data available). Learning materials are fundamental to any distance-education programme, and there needed to be more of them in this project.

Though the materials were useful in many respects and well-received by teachers starved of information and learning resources, their quality leaves scope for improvement, especially if it is to approach good standards for self-study materials (both international standards and emerging Mongolian standards). The materials were not revised, and by 2001 earlier worthy efforts appear rather dated. Some of the materials were developed in 1994-6, when producers were just starting to learn about distance education, how to design self-study materials and new teaching methodologies. Understandably, these reflect the 'beginners' skill levels' of producers and are in need of updating and re-development.

Capacity in the design and production of learning materials (print, audio and video) is limited and needs further development through training. Too little expert technical assistance was provided in developing capacity and the consequences show in the materials.

The programme plans rested on some basic misunderstandings about distance education, and some confusion persisted throughout the programme as a result. For example, the expectation that local centres would become autonomous distance-education providers is inappropriate to the circumstances of Mongolia, and fails to take advantage of the strengths and nature of distance education (for example, its potential to achieve economies of scale alongside locally relevant support for learning). The plans also appear to be rather piecemeal in character and lack the detail needed for distance-education planning. The emphasis seems sometimes to have been on distance education itself (or a particular interpretation of it) rather than on in-service teacher education using distance education as a tool. There was no clearly defined distance-education system established or structured programme.

Some of the goals and expectations of the 1997-2001 phase were unrealistic and, as a result, difficult to achieve (for example, the expectation that a number of *aimag* education centres would develop full capacity to design and implement distance-education programmes for primary teachers – this has not happened and, given the economic constraints, it is difficult to see how it could).

There was a heavy reliance on face-to-face seminars (a legacy of previous times) and under-development of learning materials and resources for teachers, together with local support structures for teachers.

These limitations arose not from lack of effort and hard work by those involved (this has been considerable), but from lack of knowledge, experience and understanding about distance education in the mid-1990s (it was new to Mongolia) and lack of expert technical assistance in planning and developing the programme. Technical assistance was only provided incidentally through the DANIDA project and was inadequate for the purposes of the UNICEF programme. While some of the training provided through the DANIDA project was relevant (basic skills in print development, training in the design of radio programmes, information on distance education), some important aspects needed for the UNICEF programme were missing. As the role of distance education diminished within the DANIDA project, the needs of the UNICEF project could not be met through this route. Some expert technical assistance would have resulted in a better programme. The project would also have benefited from having an active steering group or advisory committee.

Though some effort went into designing and gathering questionnaire data, there was insufficient analysis, recording, dissemination and use of the findings. In fact, the findings and raw data were lost because the computer file containing them was deleted or lost, and there was no hard copy or backup of the data. No database was kept on the

programme. The data-gathering tools available indicate a need for training and capacity-building in evaluation methods.

There is a lack of systematic data on the impact of the materials and programme, making it difficult to draw conclusions about it or to substantiate some of the anecdotal feedback or reports from field trips. This is a common weakness in many programmes of this kind, especially where personnel are inexperienced or need training in particular areas, or where funds are very limited.

Conclusion

The project made a significant beginning in the use of distance education for the in-service development of primary teachers in Mongolia. It met teachers' needs for information and guidance on new teaching methods and content at a time when other means of providing this were unaffordable. It demonstrated new ways of using in-service budgets so that more of the funding was spent on the training element rather than travel and accommodation costs. It reached more teachers than would have been possible through the customary forms of in-service education.

Though these beginnings needed more systematic development and evaluation, the donor's (UNICEF's) and the Ministry's priorities changed over time. Having begun distance education for primary teachers in a period of economic and social crisis in the country, it was considered that there was a danger that the project was replacing on an ongoing basis some of the work and responsibilities for in-service teacher education that were more properly those of the Ministry of Education and provincial authorities. As a result, assistance to distance education took a lower priority, and effort was focused on the development of a curriculum for six- to seven-year-old children in preparation for the introduction of a lower school entry age. Distance education approaches can still be useful in supporting the training of teachers for this new initiative, which will still need to look for cost-effective methods of training, but it is not clear yet if distance education will have a role.

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Box 10.1: **'The Five Treasures of Mongolia'**

The 'five treasures' are the five kinds of animals that herders keep: horses, camels, yak, cashmere goats and sheep. This programme interviewed herders in the countryside and veterinarians about the care and pastoral movement of animals. It took the form of a variety of linked sequences – information about animal care, traditional stories and songs, herders talking about their work and the tasks of different seasons, and the sounds of animals. Some recordings were made outside the studio, a new feature of programme construction then when radio 'lectures' were common. Its purpose was to show teachers how different subjects (maths, language, the environment) could be taught through an integrated subject approach, based on a theme that was relevant to the children's lives. The programme aimed to stimulate interest, activities and discussion among teachers. The accompanying printed text (small booklet) provided a guide to teachers' planning and preparation. This was the most popular of the radio programmes. It was the first one made, at the local radio station of Sainshand, in the Gobi Desert near the Chinese border, by the local radio producers (one of whom was a local poet), primary teachers and provincial methodologists, the education-centre director (the chief education administrator in the province), the project co-ordinator and foreign technical advisor. It was later broadcast on national radio. The work produced in classrooms as a result of this was evident in different provinces, as the technical advisor found when visiting schools in the course of other work.

Box 10.2: **Teaching at a Remote Kazakh School in Mongolia**

Taken from an interview with Ms. Ayzbai Nurjamal, Kazakh Primary School, Bugat Sum, Bayan-Ulgi, by Oyunsaihan Dendevnorov Project Officer Education, UNICEF Ulaanbaatar, Mongolia (1999)

Question: Could you please tell us about yourself, your province and school?

A. My name is Ayzbai Nurjamal and I am a Kazakh. I have been teaching for 23 years at the eight-year school of Bugat sum in Bayan-Ulgi province in western Mongolia. I am a mother of six children. I graduated many years ago from the Teacher's Training College in Arhangai province of Mongolia.

Bayan-Ulgi is the place where I was born and grew up. It is 1,700 km west of the capital city of Ulaanbaatar. There are many people in our province who have never visited the capital city. It takes 2-3 days overland to reach Bayan-Ulgii from Ulaanbaatar, or you can reach the province via twice-weekly (and expensive) flights. A one-way air ticket is almost equal to a month's salary for teachers. Bayan-Ulgi is the only province of Mongolia that is predominantly Kazakh. We are a minority nationality in Mongolia with a different language and religion (Islam) from the majority.

Our school is a typical provincial sub-district school with 22 teachers and 360 children. Children come to school from different remote places. Some stay in dormitory, others come to school on horseback. All subjects in our school are taught in the Kazakh language.

Q: What do you see as advantages and disadvantages in education in your school?

A: Despite the isolation and remoteness from the provincial centre, teachers are very committed to their work at the school. Teaching is a job respected by others. I teach in the fourth grade. I am proud to have many students.

There is one common concern and challenge in educating Kazakh children. That is that the education curricula and textbooks are not of the same standard as Mongolian-language national editions. Kazakh children are falling behind in academic achievement and have difficulty passing University and college entrance exams. Due to the language problem, Kazakh children cannot enjoy the same quality of education as other children in Mongolia. There is lack of schooling materials and textbooks. Poor infrastructure (e.g. unpaved roads, poorly developed communication networks, and limited access to information), remoteness, and minority status are obstacles to the provision of quality education and other services in our province.

Q: Could you please share with us your experience with the teacher training programme?

A: I am currently attending a workshop organised by UNICEF and the School of Education Development. The main objective of the workshop is to develop the professional capacity of primary teachers in child-centred and integrated teaching methods. There are about 40 Kazakh teachers attending this workshop from different parts of our province. By attending this workshop I've learned a lot: how to apply active learning child-centred teaching methods in our work, and differences between Kazakh and Mongolian textbooks.

The neighbouring Republic of Kazakhstan supplies most of the textbooks that we use. The Kazakhstan education system has 11 years of primary and secondary school education, whereas Mongolia has only 10 years (1-4 grades of primary, 5-8 middle secondary, 9-10 upper secondary) of schooling. At the workshop we have been discussing the acute need to introduce bilingual education programmes in Bayan-Ulgi to help Kazakh children obtain a high-quality education and be on a par with other children in Mongolia.

(Source: 'Teachers talking about learning' http://www.unicef.org/teachers/)

11 South Africa: Interactive Radio for Supporting Teachers of English as a Second Language

Executive Summary

In South Africa, English is an official language, but for many children and teachers, it is their second, third or even fourth language. The English in Action project is run by an NGO, the Open Learning Systems Education Trust (OLSET). This radio project has two audiences: primary-school children and their teachers. Through a well-structured curriculum and active learning approaches, the children learn English while the teachers improve both their English and their teaching of it.

Background

Two South African distance programmes are examined in this publication, in Chapter eight and, here, in Chapter eleven. To avoid duplication the national data for South Africa appears in table 8.1 in Chapter eight.

The past 20 years in South Africa have seen extensive racial tension and conflict, and a transition since 1994 from a police state to a democratic society. The incoming ANC government in 1994 inherited a country with widespread poverty, racial inequity and a stagnant economy. The townships had long been in turmoil and there had been widespread violence. The new government faced the task of creating a civil and democratic society and a situation in which the economy could grow.

The transition has not been an easy one. Major changes have taken place at every level of government, the civil service, industry, the trade unions and employing organisations, as well as the health and the educational systems. The transformation of the country has been a major developmental project, bringing with it successes as well as failures. In terms of the alleviation of poverty, the government prioritised the areas of housing, electrification, water provision, health and education, as well as the broader issues of provincial, municipal and land reform and the provision of access to ancillary services (such as postal services and banking).

On the broader social front, the government has managed to meet its commitment to build a million houses. There is evidence that the lives of many of those who live in the rural areas have shown a measure of improvement, with the government achieving a degree of success in ensuring that all households have access to running water. In addition, many more households now have access to electricity.

However, there has been a general drop in per capita income across the country as a whole since 1994, as well as substantial depreciation in the country's currency, implying that the majority of South Africans are steadily becoming poorer. Inequality in per capita income within racial groups has also increased, with the phenomenon of large numbers of poor white people, who under the apartheid system were protected by job reservation, also increasing.

It is also anticipated that AIDS will affect a large number of households. The AIDS pandemic is expected to make a significant impact on the economy as well as on the health and educational systems. It is anticipated, in particular, that AIDS will have a severe negative effect on the workforce over the next 10 years, thereby reducing the growth rate of the economy (The Manpower Brief, 1993; Sunter, 1998). AIDS will influence education since it is expected, in line with trends in other sub-Saharan countries, that many teachers will become infected by AIDS. If this prediction is correct, the teaching career of large numbers of serving teachers will be cut short, with negative effects on the quality of education and schooling.

The Education System

Some idea of the challenges facing the new government can be gained from the following statistics (South Africa Survey, 1995/1996).

- Approximately five million people above the age of four had no education in 1994, four million had matriculation only and 1.7 million had some form of post-matriculation education.

- An estimated 80 per cent of Africans and 40 per cent of whites could not read or compute at a standard 5 level (the basic level of literacy) in 1994.

- In 1995, there were wide provincial and regional variations in levels of literacy. Gauteng had the highest literacy rate (88 per cent) followed by the Western Cape (81 per cent). The Northern Cape and the Northern Province had the lowest (67 per cent and 65 per cent respectively).

- Approximately 55 per cent of pupils who wrote matric in 1995 passed. Only 16 per cent obtained university exemption.

- In 1993 white students received almost twice as many degrees, certificates and diplomas (31,304) from universities as African students (16,482).

- White students were awarded 73 per cent of all technikon diplomas and certificates in 1993, and African students 14 per cent. Degrees awarded in mathematics comprised 2 per cent of all degrees awarded in 1993. Engineering degrees comprised 4 per cent of the total number of degrees awarded in 1993.

- In 1994 the average amount spent on education for white pupils (R5,403) was 147 per cent higher than the amount spent on African pupils (R2,184) (excluding the former homelands). Average per capita expenditure on all pupils was R2,222.

- In 1994, 64 per cent of all teachers in South Africa were fully qualified, 29 per cent were underqualified and 7 per cent were unqualified.

- In 1994 some 116,796 students were studying to become teachers, 124,317 teachers were improving their qualifications and 239,193 teachers were improving their school competence through in-service curriculum-related courses or management training.

Faced with these challenges, the new government moved rapidly. The previously fragmented system of schooling, organised on apartheid lines, has given way to a single, unitary educational system (Chisholm, Motala & Vally, 2000). The past seven years have seen radical restructuring of the educational administration, the dismantling of the homeland education systems and the dissolution of the previous homeland administrations, the reorganisation of the country into nine provinces, the centralisation

of educational policy and decision-making in a single national ministry of education, and the devolution of responsibility for running the educational system to the provincial education departments.

There had been substantial increases in educational funding in the years prior to the 1994 elections, and this trend continued, with substantial additional funding being voted to education. The 1995/1996 national budget allocated R32.21 billion to education, an increase of 9.6 per cent on the previous year's figure and 6.5 per cent of GDP. Free and compulsory education was introduced in 1995. Nine provincial departments of education were formally established in April 1995, replacing the previous 19 education departments. The national department would be responsible for tertiary education while the provincial departments would be responsible for primary and secondary education. Teacher training would be the joint responsibility of the national and provincial departments (Hartshorne, 1996).

The five year period between 1995 and the year 2000 saw a steady increase in educational expenditure. This was reflected in per capita expenditure, which in many areas nearly doubled in comparison with the 1995 figures. In 2000/2001 an R50.7 billion (20.8 per cent of the total budget) was allocated to education South Africa Survey, 2000/2001). The vast majority of funds allocated to education have been spent on personnel costs. However, there are indications that greater amounts of money will become available for non personnel-related spending. According to the 2000 Budget Review, provincial estimates indicated that personnel expenditure would decline from a high of 91.4 per cent of education spending in 1998/1999 to 88.7 per cent in 2002/2003. If this prediction is correct, this will free up a greater proportion of funds for spending on equipment for schools, on upgrading school buildings, and on the in-service training of teachers and headteachers.

There are signs that this is starting to take place. In the year 2000, for example, provincial education departments implemented a number of programmes aimed at improving educational management, including financial management and quality in education (Chisholm, Motala & Valley, 2003). In 2000/2001, R272 million was voted for the professional development of teachers, development of education management and financial management, and to support a culture of learning, teaching and service campaign.

While these are undoubtedly steps in the right direction, failures, mistakes and certain unwise decisions have accompanied this process (Jansen, 1997). Development has been hampered by the sheer scale of the enterprise, by lack of available funds, and the continuing shortage of basic equipment, textbooks and educational materials in schools (Motala, 1997; Bot & Schindler, 2000). There has also been a pre-occupation on the part of the educational authorities with introducing large-scale curriculum change from traditional content-bound teaching to outcomes-based education (Jansen, 1997). While the move away from rote-learning is laudable, there has been an underestimation of the complexity of the task involved and of the amount training, infrastructural support and support for teachers and schools necessary to bring about curriculum change on a large scale (Motala, 1997).

The need for in-service training of teachers is a major national task, which requires prioritising, planning, resources and the active involvement of teacher organisations and local groups of teachers. To date there has been insufficient progress in this key area of educational provision. This situation is exacerbated by the fact that many of the NGOs

previously offering high-quality in-service training and support to teachers have been deprived of funds as a direct result of the new government's policy on funding NGOs. While Bot and Schindler (2000) highlight the considerable improvement in qualification levels of teachers from 45 per cent in 1990 to 36 per cent in 1994 and to 26 per cent in 1998, improvement in the quality of what is taught in the classroom involves intervention and support on a number of levels (Kgobe, 2000).

The results of the current attempt to introduce outcomes-based education has been a great deal of anxiety and confusion among teachers who are unclear about what is required (Vally, 1999), and a continuing lack of attention at the bureaucratic level to the essentials involved in assisting pre-service and in-service teachers to teach well (Motala, 1997). It is in these areas of pre-service and in-service training that distance education may have a role to play, and it is in the areas of support of teachers and headteachers, and support of schools, that OLSET is currently making a valuable though essentially limited contribution.

Purpose, Level and Curriculum

Against this background, the growth of OLSET's English in Action programme from

14,500 learners in 1994 to an estimated 680,000 today is a remarkable feat. As a logistical exercise, growth of this scale in any NGO or educational project in itself represents a major exercise in developing and maintaining teacher support and credibility. This report does not attempt to present OLSET's work as an ideal. It provides a statement of what OLSET is currently delivering via distance education with the support and generosity of its existing sponsors, in a situation in South African schools in which alternatives in educational broadcasts, teacher support and simple, well-conceptualised pupil activities and materials are not broadly available.

Purpose

OLSET has been working in South Africa since 1992. Its aim has been to develop a model for teaching English as a second language in South African primary schools, through the medium of interactive radio. At the time of its inception, a number of other projects in South Africa were also working to develop procedures for teaching English at the lower primary level (such as the Molteno project; MAPEP) and at the upper primary level (such as SELP; the Molteno Project; READ). While certain of these projects used distance education (usually print) none envisaged using radio as medium. OLSET thus became known as 'The Radio Project'.

The aim of OLSET's in-service training and support of teachers is not to replace or supplant the system of formal training for teachers provided by the state system. In contrast to more formal programmes whose aim is to certificate and provide accreditation for teachers, OLSET's aim is to provide an informal support system that meets the current needs of teachers and supplements what the state is able to provide. OLSET does not offer formal certification for teachers, preferring to work non-formally through contact and networking with teachers. The reason given for this preference is that schools in the apartheid era were a site for struggle, and an ideological battlefield. The perceived priority for post-apartheid education is to get pupils back into the classroom and teachers back to teaching. Within the structure of the national curriculum, the priority is also to create a

climate in which teachers and learners take responsibility for creating a culture of learning in each school and in every classroom.

Level and Curriculum

Initially, OLSET's vision of curriculum was as a framework for developing content knowledge (a one-way process involving transmission of knowledge from script-writer to child). The project aimed to replicate a model of interactive radio developed and implemented in Kenya, and then piloted in Southern Africa in Lesotho and in Swaziland. In the conditions applying in South Africa prior to the country's first democratic elections, however, and in response to an evaluation design that placed emphasis on teacher support groups, focus groups, school-based case studies and achievement testing (Potter, 1993a, 1993b), OLSET's vision rapidly broadened to incorporate issues relating to teacher involvement, teacher support and school-focused development.

Currently, the vision of the programme is to provide a framework for teaching and learning English that involves the teacher as an integral part of the process. OLSET's vision is to provide a curriculum for both teachers and learners (OLSET, 1995). For teachers, the curriculum is based on an agenda of ongoing contact and school-based support that is tangible and practical, as part of a wider project involving sharing ideas on what it means to teach well. For learners, the curriculum is based on an agenda of low-cost and affordable learning experiences that are structured and focused yet at the same time fun.

The English in Action programme introduces English from Grade One (Sub A) through the medium of interactive radio. From small beginnings on a pilot level in 1992, the programme currently consists of a number of levels. The first level consists of 118 daily half-hour lessons to cover the introduction of oral English during the first year at school; the second level comprises 130 lessons to cover oral and written tuition in English during Grade 2 (currently being revised to 180 lessons – one lesson for each school day of the year); and the third level consists of 180 lessons to provide one lesson of oral and written tuition in English per school day in Grade Three.

The aim is to work as far as possible within the spirit and philosophy of the state curriculum as it applies in the foundation or junior primary phase of education. What is provided on the curricular level is tangible support for teachers in the form of a structured, well-planned, sequenced and carefully graded language programme, which introduces English to pupils whose mother tongues vary greatly. The radio lessons have specific aims that are compatible with the tenets of outcomes-based education. They are useful both in introducing pupils to English through a series of engaging and fun activities involving stories, music, songs, and interactive language applications, and in providing teachers with examples of how outcomes-based lessons can be planned and applied.

The programme is designed in terms of open learning principles based on multichannel learning (Anzalone, 1995; Dodds, 1995; Leigh, 1995; Leigh, Naidoo & Ramofoko, 1995). It assumes that language learning is not a linear process, and that learners may be exposed to more or less of the programme during any given year (OLSET, 1995). There is thus plenty of reinforcement of concepts covered and terms used in the scripts. While the ideal is for children to be exposed to learning the target language daily, the reality is that this may not always take place. The move from lesson to lesson and from level to level thus assumes

that learning does not involve glass ceilings, and that the programme needs to be designed so that learners can join the programme at different stages during the year, or even repeat lessons, and still gain benefit from being exposed to English and using it.

Target Audience

The audience of the programme comprises both primary-school learners and their teachers. The programme addresses the foundation stage of formal education, starting in the first year of primary school (the pre-primary phase of education in South Africa is largely informal, since pre-primary education is not universal in the country). The teachers in the foundation stage of primary school are mostly female, with an average of a matric and a teacher's certificate involving three years of post-matric teacher training (Strauss, van der Linde & Plekker, 1999).

Scope of the Project

It is estimated that in the second half of 2001 more than 17,000 teachers and over 680,000 learners will be directly affected by the project's work. While these figures are based on the project's estimates and records, there may in addition be a large number of 'shadow' listeners (such as parents who listen to broadcasts during the day, children out of school and schools not directly serviced by the project coordinators) who may also be involved with and benefiting from the programme's radio broadcasts.

The growth in numbers of teachers and learners involved in the programme has been remarkable. The project commenced work in 290 primary-school classrooms in 1993 and 1994. Following favourable reception and evaluation of the radio programmes in both urban and rural schools, the development of teacher support in the form of workshops, teacher support groups and a programme of school and classroom visits, and efforts to attract the interest and advocacy of interest of officials in the education system, the programme has grown exponentially. At this stage (mid 2001) there are an estimated 14,500 primary-school classrooms in which teachers are using the programme. This is likely to rise to 17,000 over the second half of 2001.

Accurate teacher and pupil figures were available at time of writing for the year 1999 (see Table 11.1), but not for 2000 and 2001. The reasons for this relate to implementation and funding difficulties that the project has experienced over the past three years. With increased funding and support from international funders as well as the SABC, OLSET is now in a position to update its database, and accurate statistics should become available in 2002.

Comparison With the Regular System

In the year 2000, a total of nearly 13 million students were enrolled at public education institutions in South Africa. Of these, a total of 1,055,397 were registered at Grade One level, 1,090,765 at Grade Two level and 1,178,712 at Grade Three level (Bot, 2001). In the year 2000, OLSET's programmes targeted learners in Grades One to Three, and reached an estimated 550,000 learners and 12,000 teachers across seven of South Africa's nine provinces. These numbers have increased further at the time of writing (July 2001) to an estimated 680,000 learners in Grades One to Three, and an estimated 14,500 teachers. Additional training of teachers is also being undertaken in Mpumalanga, Northern and North West provinces, which involves an additional 3,000 teachers, the majority of whom work in rural and farm schools in these provinces. The project's target is to reach 25,000

teachers during the year 2002, and is preparing print materials to service the needs of teachers and learners in this number of classrooms.

Olset's Organisational Model

The project has a core of six full-time staff based at its head office in Braamfontein, Johannesburg, supported by three part-time support staff. Full-time staff include the project director and supporting administrative staff, a writer of the radio lessons, a producer for the radio lessons, a DTP specialist and the regional coordinators of the Gauteng and Mpumulanga regions. In addition to these staff, there are nine regional coordinators, of whom three work from head office in the regions close to Johannesburg, while the other six are based in regional offices around the country.

The roles of the core head office staff are focused on providing contact with funders and donors, on writing and producing materials, and on setting direction for the work of the project as a whole. The roles of the regional coordinators are focused on field implementation of the programme's school-based and teacher-support activities. Their work includes school visits, the development and support of teacher-support groups, the planning and implementation of in-service training workshops, dissemination of materials to the schools, as well as responsibility for regional liaison with the education officials and broadcasting stations in regionally and locally.

Between 1994 and the end of 1999, the project employed a team of writers, a team of producers and two DTP specialists, as well as a deputy director and a teacher development coordinator, who provided direction to the regional coordinators. However, with funding exigencies, there had to be severe cutbacks at the end of 1999 and numbers of head-office staff were cut to a minimum. A practical consequence of this has been the devolution of responsibilities for teacher development to the regional coordinators. Another practical consequence has been that funds have not been available to bring the regional coordinators together to share ideas face to face, as a prelude to sharing ideas and developing common plans and implementation strategies.

Olset's Model of the Teacher and School Support

OLSET's model of teacher and school support involves use of distance education media in combination with face-to-face teacher support in the form of school visits, teacher support groups and in-service training workshops. The role of supporting materials provided by the project, school visits undertaken by the regional coordinators, as well as regionally and locally organised teacher support groups and workshops is to provide teachers with the type of support they need to teach the radio lessons well. This support is both tangible, in the form of posters, workbooks and so on, as well as intangible, through ongoing interaction and support, aimed at developing a process of discussion and sharing of information about teaching.

The starting point for discussion is how to teach the radio lessons, and how to link the programme and the radio broadcasts with other areas of the lower primary-school curriculum. This is then used as a platform for a broader process of teacher development. The intervention strategy is based on the assumption that radio lessons should not involve a one-way process, but one that requires the involvement of the teacher in both lesson

planning and implementation. Involvement of teachers can, in turn, provide a starting point for school-based intervention on a number of levels.

Distance-education Media

The project provides radio lessons for pupils, as well as support for teachers working in the first three grades at school. The support provided by OLSET involves a mix of distance-education media, in the form of daily radio lessons supported by print and graphic media, including posters and classroom materials, workbooks and comic readers. The radio lesson sequence provides a common thread and structure, which in turn provides a platform for broader networking and teacher support. The radio lessons are delivered to the schools by radio and audio-tape, and the printed material is delivered to the schools by the project's nine regional coordinators. The numbers of schools, teachers and students receiving the programme by each of these media has varied, depending on the availability of a broadcast signal.

Over the second half of 2001 at Level One, OLSET will make available to schools 16,800 teacher guides, 16,800 colour charts, 40,000 alphabet friezes, 80,000 posters and 840,000 activity books. At Level Two, 7,575 teacher guides, 15,150 colour charts, 60,600 posters, 378,750 activity books and 189,375 readers will be distributed to schools, while the corresponding figures for Level Three are 3,000 teacher guides, 3,000 colour charts, 72,000 posters and 300,000 activity books.

Regional, Local and School-based Support

In 2001, OLSET has nine regional coordinators, supporting the programme at Grades 1-3. In addition to school visiting and the provision of print materials to support teachers in the classroom, OLSET's model is for regional coordinators to stimulate the development of teacher support groups in their regions and to provide support to these. The project also aims to provide teachers in their regions with regular in-service training workshops. The workshops focus on use of the teacher's manual in planning and implementing the radio lessons, teaching in support of the radio lessons, as well as English language teaching in the context of outcomes-based education and the curriculum more broadly. Teacher support groups also cover issues relating to lesson planning and creation of teacher aids.

In addition to teachers' needs for support, there are needs for direct learner support in the classroom. The majority of the schools with which OLSET is working are not well equipped, and many classrooms lack basic teaching equipment as well as educational materials such as posters, children's workbooks and reading materials. This is the case in both urban and rural schools, but is particularly the case in schools in the rural areas. OLSET is providing support both on the content level, in terms of radio lessons, as well as support in the form of basic teaching equipment such as radios, posters and wall-charts, as well as printed educational materials in the form of pupil workbooks and readers. These materials are simple and basic, but have a number of potential uses. While the graphic and print materials are designed to be used to support the teaching of English (which is an area which many South African primary school teachers find difficult to teach, and difficult to teach well) the evidence from classroom observation as well as teacher testimony suggests that they have also been found to be useful for the teaching of other primary-school subjects.

Both learners and teachers are considered important clients and beneficiaries of the programme. Materials, while centrally written by a team of writers, are workshopped

through a process that involves teachers. In addition, teachers are consulted about their needs through school visits and teacher support groups, which in turn determine the focus of in-service training workshops.

Funding and Sustainability

Reference has been made in this report to financial and funding limitations that have occurred over the past three years, and this section of the report seeks to correct any impression of lack of generosity on the part of international donors over this period. The opposite has been true. OLSET has been extremely fortunate in attracting major support from a number of international donors, in a context in which many other NGOs working at scale have been unable to operate due to lack of funding, and have either scaled down or ceased operation.

OLSET has attracted support not only from funders interested in the potential of radio as a low-cost medium of communication, but also from organisations making use of radio as a means of community development in post-apartheid South Africa. This includes organisations sponsoring and manufacturing 'wind-up' and solar-powered radios, as well as the national broadcaster (the SABC) and community radio stations, which have provided free airspace and broadcasting time.

The support of OLSET's work by international donors has been ongoing, and had this not been the case, the project would have had to cease or scale down its operations. OLSET has been funded since its inception by USAID, and over more recent years has been funded by the Norwegian government. It has received promises of major support from DFID, and this increased support has opened up possibilities for supporting more schools, teachers and learners. Mention should also be made of the support the project has received from the SABC and community radio stations. The current promises of increased airspace from the SABC have opened up possibilities for support of schools, teachers and learners in a number of areas of the country which up to now have not been open to the project, or have been open but erratically serviced.

The project does not receive any financial support or grants in aid from the South African government. While this can perhaps be understood against a background of cuts in non-personnel spending and lack of funding available since 1995 for essentials such as textbooks (Bot & Schindler, 2000), there is still no central vision and overall policy on the value of educational broadcasting.

At the same time as the demand for the project's services have grown, there have been problems with funding, with international donors expressing concern about the lack of commitment of funding by government to support OLSET's activities. OLSET can thus currently be described as a project that is responding to multiple demands for mass delivery of its services, but without financial commitment by government to support its activities. While government education officials openly endorse the project's approach, and are happy to enlist its support, the project remains vulnerable financially.

In their evaluation of the project's work, Hunter, Nonyongo and Smith (1998) pointed out that the management structure of OLSET was very flat, and recommended that steps be taken to recruit a deputy director. While acknowledging that OLSET's structure had emerged for financial reasons, the evaluation team pointed out that it was essentially

unsuitable in an organisation that had become large and complex. It should also be noted that the organisational structure has had to be trimmed down further since Hunter, Nonyongo and Smith's report was written.

Cost and Analysis

The figures below are based on the OLSET database and are for 1999. Accurate figures for learner and teacher numbers for the years 2000 and 2001 are not available, but should become available in early 2002.

Table 11.1: English in Action: Programme Assumptions

Instructional subjects	1
Students	471,215
Students per class (average)	50
Participating classes	11,132
Teachers (ratio 1:1 class)	11,132
Average participating classes per school	3.8
Schools	2,892
Provinces involved in the programme	5
Regions supported by regional coordinators	9
Range of schools per province	166 (OFS) - 1232 (KwaZulu/Natal)
Total finance provided by sponsors (SA Rands)	4,270,000
Total finance provided by sponsors (US$)	700,000
Life of radio programmes and materials (years)	8
Cost per child (SA Rands)	9.06
Cost per child (US$)	1.49

At the time of writing this case study report, only estimated figures for pupil and teacher numbers for 2000 and 2001 were available. In terms of increased numbers of teachers and pupils involved in the programme in 2001, and on the basis of the exchange rate pertaining to the SA Rand at 30th June 2001, the costs per child for 2001 are estimated at US$ 1.07. This figure is likely to change, as additional expenditure on teaching and educational materials are factored in over the second half of 2001 and as more accurate figures on teacher and learner numbers and on expenditure over the second half of the year become available.

Table 11.2: English in Action: Investment Development Costs

Item	Item cost (SA Rands)	Total cost (SA Rands)	Total cost (US$)
Script-writing and production	180,000	180,000	29,508
Radio programmes:			
Studio costs	260,000		
Recording tapes and batteries	90,000		
Actors	18,000	368,000	60,328
Printed material:			
Artwork posters	18,000		
Workbooks/activity books	180,000		

Distribution	36,000	414,000	67,869
Teacher support groups and workshops	180,000	180,000	29,508
TOTAL	1,142,000	1,142,000	187,213

Table 11.3: English in Action: Running Costs

Item	Item cost (SA Rands)	Total cost (SA Rands)	Total cost (US $)
Salaries:			
Administration			
Production and field implementation	220,000		
Levies	1,727,600		
	7,200	1,954,800	320,459
Transport:			
Travelling	420,000		
Vehicles	72,000	492,000	80,656
Office expenses:			
Office rentals, electricity and water	108,000		
Regional offices	180,000		
Office maintenance and repairs	82,000		
Insurance	24,000	394,000	64,590
Inter-office communication:			
Telephones and faxes	108,000		
Photocopying	48,000		
Stationery	30,000		
Postage	4,800	190,800	31,279
Additional (accounting and auditing fees; bank charges and interest, consumables, staff recruitment)	96,400	96,400	15,803
TOTAL	3,128,000	3,128,000	512,787

The estimated cost per capita figures for 2001 are likely to change, as additional expenditure on materials over the second half of 2001 is factored in. The development and running costs based on the estimates available at July 2001 were US$ 0.83 per child. This costing was based on estimated expenditure of US$ 515,000 budgeted for the year as a whole as against estimates of 620,0000 learners involved in the radio learning programme as at 30 June 2001. To this per capita figure needs to be added expenditure relating to teaching and educational materials, which is estimated at US$ 0.24 per child, but may well work out to be higher once accurate costs are calculated for the production, storage and distribution of print materials to participating schools over the second half of 2001.

Problems Faced by the Project

Two of the major problems faced in the implementation of the project are outlined below.

Lack of Airspace

Sustained and consistent access to broadcasting time has been one of the major problems faced by the project since its inception. The initial phase of the project's work between 1992

and 1994 used audiotapes rather than radio broadcasts. For reasons of the lower costs associated with radio delivery, the decision was taken to negotiate with the national broadcaster, the SABC, to provide airspace and a daily mid-morning slot for the programme. This negotiation has been a time-consuming process that has hampered the development and expansion of the project. Similarly, at local level project coordinators have spent a great deal of time negotiating access airtime on community radio stations.

This has resulted in sporadic broadcasting of the programme in many areas, and in many cases the programme has had to be delivered to schools on tape. Audio-tapes of the radio lessons are not always been available, and there have been also tensions around erratic delivery of programme materials in certain areas and schools. Also, audio-tapes are far more expensive per capita than radio broadcasts, reducing the budget available for time spent by the Regional Coordinator supporting teachers in schools. In addition, the servicing of schools not receiving a radio signal placed strains on the resources of the project and of the regional coordinators.

There has recently been a breakthrough with the SABC, who have agreed to provide airtime on five of their radio stations in 2002 (Umhlobo Wenene FM, Munghana Lonene FM, Motsweding FM, Ukozi FM, and Ligwalaga FM). This will enable the radio lessons to be beamed to the majority of the areas in which the project is currently working, and enable additional schools and teachers to use the radio lessons.

Increasing Demand and Overstretched Resources

An additional problem has been limitation in finance, relative to the rapidly increasing demand for the project. The last four years, in particular, have seen the need to service the needs of large numbers of teachers and school pupils. This has made major demands on the project team, with the demands outstripping the resources of the project in staff, time and money, particularly over the past two years. There have been inevitable tensions in the project between quality and quantity. Material support provided to participating schools has in many cases been erratic. Difficult choices have had to be made, and the project has cut head office staff to a minimum in order to maximise personnel resources available regionally. Keeping the programme going has been the priority, with which each regional coordinator has coped on the logistical level as best as he or she could, and with varying degrees of success.

The funding situation in the project has recently changed for the better, and with it, the possibility of increasing tangible support to participating schools and teachers.

Outcomes

Despite the problems outlined above, there is evidence that the English in Action project provides a valuable service for teachers and pupils.

Needs Fulfilment

It is clear from the responses of teachers and learners that OLSET is helping to fulfil needs for teacher development, in-service training and support in South African primary schools. The rapid growth in numbers is an indication of the need for support on the part of teachers. Most teachers speak English as their second, third or fourth language.

Those teachers who are not themselves confident in speaking English have found the task of teaching English a difficult and a daunting one.

Interviews with participating teachers suggest that they appreciate the variety of activities, music and vicarious experiences radio can bring to the classroom. The programme has also provided valuable support in planning and implementing the teaching of English language in schools where materials and practical support have previously been lacking. At the same time, however, teachers would like OLSET to provide more that it does, and express frustration that the teacher support provided at school level is not fuller and more frequent (Brand, 1998; Chippendall, 1998; Graham, 1998).

Classroom observation indicates that the pupils enjoy the activities involved in the programme, and this is corroborated by teacher accounts (Potter, 1995; Chippendall, 1998; Graham, 1998; Ntshoe, 2000; Potter, 1994, 1995; 2002; Potter & Silva, 2002). Learners appear keen not to miss the radio lessons. They will remind the teacher as the time of the radio lesson approaches, or will come and call the teacher from the staff room if necessary. The evidence also suggests that the experiential and activity-based nature of the radio lessons contrasts positively with the more passive roles in which learners find themselves in other areas.

Impact

The available evidence from teachers' testimony would suggest that there is clear value in the support provided. At the same time, however, the project's impact on the quality of teaching in the schools is more difficult to determine, as the measures used have been largely indirect. Teachers' self-reports have been overwhelmingly positive (Potter, 1994; Potter & Silva, 2002). Classroom observation and interviews with teachers have yielded evidence that the teachers have a high level of commitment to the programme and believe that its methodology assists them in their classroom teaching (Basson, 2000; Brand, 1998; Chippendall, 1998; Graham, 1998; Ntshoe, 2000; Potter, 2002; Potter & Silva, 2002). Comparison of the self-efficacy of OLSET teachers with non-OLSET teachers has yielded equivocal results (Masuku, 2000). However, comparison of proficiency test scores of OLSET and non-OLSET pupils have yielded results favouring OLSET pupils both at the time of project's inception (Arnott, Mansfield & Mentis, 1993a; Arnott, Mentis & Mansfield, 1994) as well as more recently (Jacobson, 2001).

Quality of Learner Support

The radio lessons provide a number of potential benefits to learners. In particular, the radio lessons provide the possibility of widely available, low-cost and enjoyable activities for learners on a daily basis. The print materials provide additional possibilities for learner support.

However, with the difficulties relating to broadcasting and funding over the past three years, the quality of training and support has varied considerably. These difficulties have been compounded by the cuts in staff at head office, and in particular the loss of those staff who previously held responsibility for developing and overseeing teacher development work, playing a pivotal role in linking curriculum development with field implementation (de Reuck, 1999; Hoosen, 1999; Kerr, 1999; Rabson, 1999). Attention paid by regional coordinators to the development and support of teacher support groups

and the provision of in-service training workshops has varied, with large-scale in-service training of teachers taking place in certain regions, while in others provision has been erratic. The rapid growth in the number of teachers using the radio programme over the past three years has also overstretched the project's limited resources, leading inevitably to erratic implementation in many areas.

The evidence from the work of the OLSET programme over a nine-year period indicates that, despite lapses in consistency of broadcasting, regularity of school visits by OLSET coordinators and availability of OLSET materials, schools and teachers remain enthusiastic about the project (Basson, 2000; Chippendall, 1998; Graham, 1998; Potter & Leigh, 1995; Hunter, Nonyongo & Smith, 1998; Ntshoe, 2000; Potter, 2002; Potter & Silva, 2002). One reason for this may be that a number of different types of support are offered by the project: radios or tape recorders, batteries and radio and audio-tape lessons; print media including posters, a teacher's manual, pupil's workbook, and comic readers; visits from regional coordinators to participating schools; workshops and teachers support groups. Another reason is that in the current move to outcomes-based education, OLSET has taken steps to ensure that the focus of its lessons is compatible with an outcomes-based teaching format. In the absence of other support and training on how to implement the required system of outcomes-based education, many teachers perceive that OLSET is providing the only consistent in-service training and support, and that the support provided is compatible with the changes the state education system is requiring them to make.

Acceptance

The continuing lack of central vision on the part of the South African government of the potential of educational broadcasting for national development has been a major hindrance to the project. There are, however, signs of change. In 2001 there were a number of approaches by enlightened senior educational officials to the project, which are promising both as reflecting increasing recognition both of the potential of educational broadcasting as well as of the need to provide large-scale in-service training and support for teachers.

In addition to evidence of acceptance and support for the project's work by teachers, pupils, headteachers and parents, there are encouraging signs of growing acceptance on the part of educational officials of the need for wide-spread and accessible forms of in-service training and support for teachers, as well as evidence of support for the project's work on the part of the national broadcaster. Finally, there has been major commitment by the project's sponsors to supporting its work on a wider scale.

Conclusions and Recommendations

In summary, the situation since 1994 can be described as rapid expansion in the project, which has led to great demands through increase in the number of schools, teachers and pupils serviced by the project. The lack of infrastructure has stretched and over-extended the resources of the project, and has placed a wider variety of demands on the organisational abilities of all project personnel (de Reuck, 1999; Hoosen, 1999; Kerr, 1999; Rabson, 1999) and the regional coordinators in particular (Potter, 2002). The fact that the project has survived and has continued to grow in the face of these difficulties can be attributed both to the needs of teachers for in-service training and support, the personal qualities and capabilities of the project team and the regional coordinators in

their negotiations with teachers and schools, and the perceived value of the materials, radio lessons and teacher development and support provided by the project.

Despite the evidence that the implementation of the programme at classroom level often varies in quality (Basson, 2000; Brand, 1998; Chippendall, 1998; Graham, 1998), evaluations conducted at various points over the life of the project (Potter & Leigh, 1995; Hunter, Nonyongo & Smith, 1998; Naidoo & Potter, 1996; Potter et al. 1995; Potter, Dube, Kenyon & Naidoo, 1995; Potter, 1998; Ntshoe, 2000) indicate that the programme has attracted wide-spread support among teachers and principals. There is also evidence (Arnott, Mansfield & Mentis, 1993b; Arnott, Mentis & Mansfield, 1994; Jacobson, 2001) of pupil gains. For this reason, the conclusion is that OLSET's model of teacher and school support has value, and could provide a basis for support to teachers and schools in other areas of the curriculum.

Developing Teacher Support Structures

It is apparent that the function of teacher development is not receiving sufficient attention at present, and that priority needs to be placed on developing this aspect of the OLSET's work both centrally and regionally. An aspect of the central brief would include the development of a monthly newsletter sharing teachers' stories and examples of good practice, as well as materials for teacher development. Additional support at regional level could also be helpful in getting this initiative up and running. Were this work to link with the Web-based materials envisaged (for example) under the Imfundo project, there could be a possibility of taking things forward. In particular, OLSET could provide both an established infrastructure and credibility, while the Imfundo initiative or a specific agency working under the auspices of UNESCO (such as IRFOL) could provide access to what is available in distance-teaching methods and materials targeting teacher development internationally.

Despite the cutbacks, OLSET remains well positioned to disseminate materials and information to the regional coordinators via the Internet. The evidence suggests that a number of regional coordinators know how to use the Internet and email, but that others do not. With the greater access to international funding that is currently emerging, it is recommended that funding and training be directed to developing these capabilities across the project as a whole, with the aim of realising the considerable potential for development that exists in this area.

Assessment and Accreditation

Currently, OLSET focuses on providing non-formal in-service training and support to teachers. This does not led to accreditation. The view of project staff is that this is probably the correct focus for the foreseeable future, given where the country is in terms of its development at present. What the project team see as the priority is to create a culture of learning at school level, and this implies getting teachers and pupils back into the classroom and back to work.

A certain amount has been achieved in this area already, and the issue is how to achieve more, and on a wider scale. Given the current lack of a viable state system of in-service training for teachers to support the introduction of outcome-based education (Jansen, 1997; Motala, 1997), the project team feel that more will be achieved at lower-primary level using

informal structures at present. They are thus not placing priority on accreditation, which they perceive as the task of the state, or parastatals such as universities and teacher training colleges, rather than an NGO. However, the issue of recognition of teachers for work done is an ever-present one, and a more formal system of teaching practice and supervision, linked to a system of certification or professional recognition, could be helpful in future (Hartshorne, 1992, 1999).

For the present, OLSET needs to focus on improving what it is currently doing, so as to create a working system of teacher support groups in all areas and regions, supplemented by more formal in-service training workshops held at regular intervals. This could be linked to a system for recognising teachers for their contributions, such as publication of teachers' achievements in a regular newsletter or regional competitions (Potter & Moodie, 1991, 1992).

Evaluation and Quality Control

One of the tensions in OLSET's development has been to maintain a balance between size and quality. OLSET has taken the route of increased numbers over the past four years, at the inevitable expense of quality of support. This has been justified by the widespread needs of teachers and pupils; the lack of other viable alternatives for meeting these needs; a context in which much of the valuable support provided by other NGOs has been starved of funds; and the perceived need to increase scale and thus bring down costs per capita.

There is evidence clearly pointing to ongoing support from teachers for the English in Action programme. There is, however, very little evidence concerning quality of work done. The various ethnographic studies done as part of this evaluation point clearly to the need for systems of assessment and quality control in the project. There is not a common set of criteria for what constitutes good teaching, nor a set of criteria for establishing for whether those teachers participating in the project teach well, or teach better as a result of their involvement in English in Action. Teachers believe that their teaching has improved. However, there is no commonly accepted framework for collecting and assessing evidence as to how teachers are teaching, no procedures for establishing whether teachers' classroom practices are changing.

Despite this, a series of small-scale evaluative studies have been conducted, based on a number of data sources, including classroom observation, questionnaires and interviews with teachers, teachers' accounts, school-focused case studies and achievement testing of pupils. What could be helpful would be to extend and formalise the processes of internal and self-evaluation, and link this to an ongoing and formalised process in which the project gathers its own data for accountability and quality-control purposes.

Sustainability

Funding and sustainability remain linked and crucial issues for the OLSET project. As the first report to the Imfundo project's advisory group stated 'There is a long history of well-intentioned, technology-driven interventions in developing countries which have failed, because they are not properly used or maintained and because they are financially unsustainable.' (Imfundo Project, 2000, p. 21). In OLSET's case, there is evidence of a very good project, which is faced with the need for large-scale delivery for its services. It has had to battle continually for donor support, and there have been a number of times when the

project has been faced with closure due to lack of funding. This has placed severe limitations on what the project has been able to achieve.

At present OLSET is short-staffed, and funds have not been available to bring regional coordinators together to discuss curricular and developmental issues in the project. The shortage of funds has also had an effect on staffing. The director is supported at head office by a number of (mainly) part-time staff, and then interacts directly with the regional coordinators. In their 1998 evaluation report, Hunter, Nonyongo and Smith remarked on the lack of a deputy director in a project of OLSET's size. Their conclusion was that the staffing structure made the project precarious in terms of sustainability. Since then the project has doubled in numbers, and various roles are not being fulfilled under the current staffing structure. These include responsibility for teacher development and curriculum, materials production, dissemination and administration, and gathering information for assessment, accountability and quality control purposes. Whether the employment of a deputy director is sufficient to meet these responsibilities in a context in which the project has been and continues to grow rapidly is doubtful.

The project's ability to sustain its work is dependent on a few key individuals. With the current organisational structure there must be doubt, should certain key personnel (and in particular the project director) leave, as to whether the project would be able to continue its work. Both resourcing and staffing issues will need to be addressed if the project is to develop a model for working which is sustainable, and which addresses issues relevant to both teacher support and quality control. The recommendation is thus that OLSET's director and board of trustees take a hard look at means of delegating responsibility for key responsibilities in the project. This could involve the creation of a number of portfolios (for example for curriculum, administration and quality control, plus related aspects such as teacher support and evaluation) and then establishing a workable structure in which these functions are either fulfilled by full-time members of staff or subcontractors.

OLSET's Work in the Context of Distance Education

Interactive radio has been used successfully in a number of developing countries to introduce basic education of different types (Imhoof & Christensen, 1986; Olsson, 1989; Zirker, 1990; Potter & Leigh, 1995; Dock & Helwig, 1999). It offers a cost-effective technology capable of delivering instruction to schools in both urban and rural areas.

However, while it can be justifiably claimed that radio is the most cost effective ICT with the widest potential coverage currently available within Africa (Imfundo Project, 2000, p. 12), there are limits to what interactive radio by itself is able to achieve in the absence of a focus on improving the quality of teaching and educational management in schools. The problems in South Africa's educational system, and with its curricula, are broad-based, and are unlikely to be solved by instructional technology in itself. There is little evidence at present that, despite increasing expenditure on education, the crisis in South African education is over. While the evidence suggests that many schools are involved in internally- and externally-driven staff development activities (Kgobe, 2000), it also suggests that the quality of these initiatives varies widely. In particular, the in-service training of educational officials, teachers and headteachers in outcomes-based education leaves much to be desired. In the absence of these necessary conditions for

initiating and sustaining curriculum change, major national curriculum development is likely to have limited success.

It is in the areas of pre-service as well as in-service training of educational officials, teachers and headteachers that distance education may have a role to play. And it in the areas of support of teachers, headteachers and schools that OLSET is currently making a valuable, though essentially limited, contribution.

OLSET's Contribution to Teacher Education

Perraton (2000) has suggested that the majority of teacher education focuses on four areas, and that distance education has the potential to make a contribution to training teachers in each of these aspects:

- giving trainee teachers a general education
- improving their knowledge of the subjects they will teach
- teaching them about children, the curriculum and pedagogy
- developing their skills in the classroom.

OLSET is currently working through a combination of distance education media and direct contact with teachers, and making a focused contribution at present in the second and fourth of these areas. It also makes some contribution in the third area, and with greater resources could make a greater contribution than at present. OLSET's curriculum is focused and develops pupils' basic skills in English language and teachers' teaching skills. It is compatible with outcomes-based education, on which the South African education authorities are placing major emphasis at present. It is also compatible with more content-based conceptions of curriculum, in which English is regarded as the medium for across-the-curriculum work.

The Way Forward

Having established a national infrastructure to support teachers and learners, having gained the support of the SABC in terms of greater access to airspace and having established increased funding from its international donors, OLSET is in a position to expand the project. To do so, it will need to maintain and increase the support and advocacy of teachers, headteachers and enlightened government officials. In addition, in order to make a wider contribution than it does at present, OLSET will need to focus on improving a number of aspects of teacher development and support.

In order to work effectively at greater scale, resources need to be directed to the key areas of administration, curriculum and teacher development, which have been overstretched due to the rapid growth in teacher and learner numbers, and the funding exigencies of the past three years. The project's system of sharing and in-service support via teacher-support groups needs to be created in all areas and regions (Naidoo & Potter, 1996; Potter, 2002), supplemented by more formal in-service training workshops at regular intervals. There is also a need for greater priority on internal monitoring and quality control (Hunter, Nonyongo & Smith, 1998).

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JEAN-FRANÇOIS TERRET

12 Burkina Faso: Professional Development of Headteachers

Executive Summary

In association with RESAFAD (Réseau Africain de al Formation à Distance) Burkina Faso has developed a course for the in-service professional development of headteachers. The programme benefited from the use of new information and communication technologies (ICT) to help the process of course development but used print, coupled with meetings of headteachers, to reach its scattered audience. Over four years it reached about a quarter of Burkina Faso's headteachers.

Background

Table 12.1: Burkina Faso: National Data

Population (millions)		11.2
Size ('000km^2)		274
GDP per capita (purchasing power parity US$)		965
Educational data	*Primary*	*Secondary*
Teaching force	14,037	–
Total '000		–
'000 female	3,412	
Gross enrolment ratio		
All students	40	–
Female	31	–
Pupil-teacher ratio	50	–

Source: UNDP, 2001; UNESCO, 2000; UNESCO, 2001; Note: population, size, GDP and HDI figures are for 1999; education figures are for 1996.

More than 80 per cent of Burkinese people live in rural areas. The capital city, Ouagadougou, is experiencing strong population growth (over nine per cent).

Education System

Table 12.2: Enrolment

Level	*Enrolment (%)*
Total enrolment (1999)	41.3
Primary education (1996)	27.0
Secondary education (1996)	9.7
Higher education (1997)	1.0

Of the 8,300 students in higher education in 1997, 25 per cent were girls.

Pre-school education is being developed in urban areas under the auspices of the Social Services Ministry.

Table 12.3: Structure of the Education System

Level	Cycle	Year	Diplomas
Primary		1st	
		2nd	
		3rd	
		4th	
		5th	
		6th	Certificat d'Etudes Primaires (CEP)
Secondary	Junior	1st	
		2nd	
		3rd	
		4th	Brevet d'Enseignement du Premier Cycle (BEPC)
	Senior	5th	
		6th	
		Final year	*Baccalaureate*
Higher education	Undergraduate	1st	
		2nd	Diplôme d'Etudes Universitaires Générales
	Final honours	1st	Bachelor's degree
		2nd	Master's degree

Postgraduate courses are scarce in Burkina Faso. They begin with a first year leading to a Diplôme d'Etudes Approfondies (DEA) or Diplôme d'Enseignement Supérieur Spécialisé (DESS), followed by a further three years to obtain a PhD.

The following categories of teachers exist in Burkina Faso:

- Assistant Teacher (AT)
- Certified Assistant Teacher (CAT)
- Certified Teacher (CT)
- Head Teacher (HT)

Assistant Teacher status is granted to student teachers from the National Primary Teacher Training Colleges. Recruitment takes place at BEPC level (end of junior secondary school). Certified Assistant Teacher status is open to candidates holding the CEAP elementary teaching proficiency certificate, the basic professional qualification issued by the Ministry of Basic Education and Literacy (MEBA). Certified Teacher status is granted to holders of the CAP teaching proficiency diploma. Head Teacher status is gained after a year's training at the Ecole de Contrôle et d'Animation Pédagogique (ECAP).

MEBA teaching qualifications continue with the grades of Educational Consultant and Primary School Inspector. The former is open to Certified Teachers and Head Teachers, who are required to undergo a competitive selection process and two years of training at the ECAP. The latter is also subject to a competitive selection process open to primary- and secondary-school staff.

Distance Education

The Staff Training Service, a technical branch of the MEBA, has a distance-education unit that offers courses to prepare certified teachers, head teachers and primary-school inspectors for examinations and competitive selection processes. Coursework is sent in, corrected and returned by mail, with corrected versions published in the ARC education journal.

In 1996, the National Literacy Institute, which is attached to MEBA, launched a distance-learning programme for literacy workers in partnership with the Agence Intergouvernementale de la Francophonie (AIF, formerly the ACCT). Distance education has also been made available to satellite school supervisors. Only a few private training organisations (e.g. INADES-Formation) offer correspondence courses.

As part of the teacher-training component of French Cooperation's Basic Education Support Project (defined by a bilateral agreement ratified in 1996), a national capacity-building programme set out to promote the production of distance-education systems and tools and the use of ICT.

Meanwhile, French Cooperation was deploying the logistics of the African Network for Distance Learning (RESAFAD) in four West African countries: Burkina Faso, Guinea, Mali and Togo. Each country was equipped with a multi-media resource centre (featuring a permanent Internet connection) and a technical assistant specialising in distance education and the use of ICT in training. Network deployment and the recruitment of technical assistants were coordinated by Denis Diderot (Paris 7) University's Laboratoire d'Ingénierie Didactique, which subsequently enjoyed the support of a consortium of French universities.

Designers in all four countries underwent simultaneous technical and methodological training aimed at enabling them to use the Internet for exchanging ideas, methodological guidelines and resources for implementing the Headteacher Distance Learning Programme.

In Burkina Faso, national Headteacher Distance Learning Programme designers were recruited from the ranks of MEBA managers and trained using RESAFAD logistics (resource centre, learning materials and instructor), thus paving the way for the programme's implementation. Given that the focus of this report is on distance learning for headteachers, it does not take account of the costs incurred by the above-mentioned technical and methodological training. The RESAFAD system may well have served to define the project (supplying advice and support) and to train national designers; and the above training-action may have originally prompted – and provided the initial *raison d'être* for – the deployment of the logistics. But in view of the fact that it has assisted in so many other training projects and programmes, it would have been extremely difficult to determine what share of the overall set-up and operating costs to attribute to the preliminary training of national experts.

Level, Purpose and Curriculum

The Conference of Ministers of Education in French-speaking Countries (CONFEMEN) that took place in Conakry (Guinea) in 1992 had pointed out that efforts needed to be made to meet the training needs of an audience – especially in West Africa – accustomed to working as headteachers without having undergone any basic training.

Delegates from six countries (Benin, Burkina Faso, Gabon, Guinea, Mali and Togo) were brought together for a seminar looking into distance learning for headteachers. It culminated

in the recommendation that national designers be trained to create a distance-learning system and distance-learning tools. Furthermore, the deployment of the RESAFAD network should help supplement such methodological training with technical instruction in the use of ICT so as to foster the exchange of ideas and resources produced by national teams over the Internet.

Figure 12.1: Deployment of the RESAFAD system
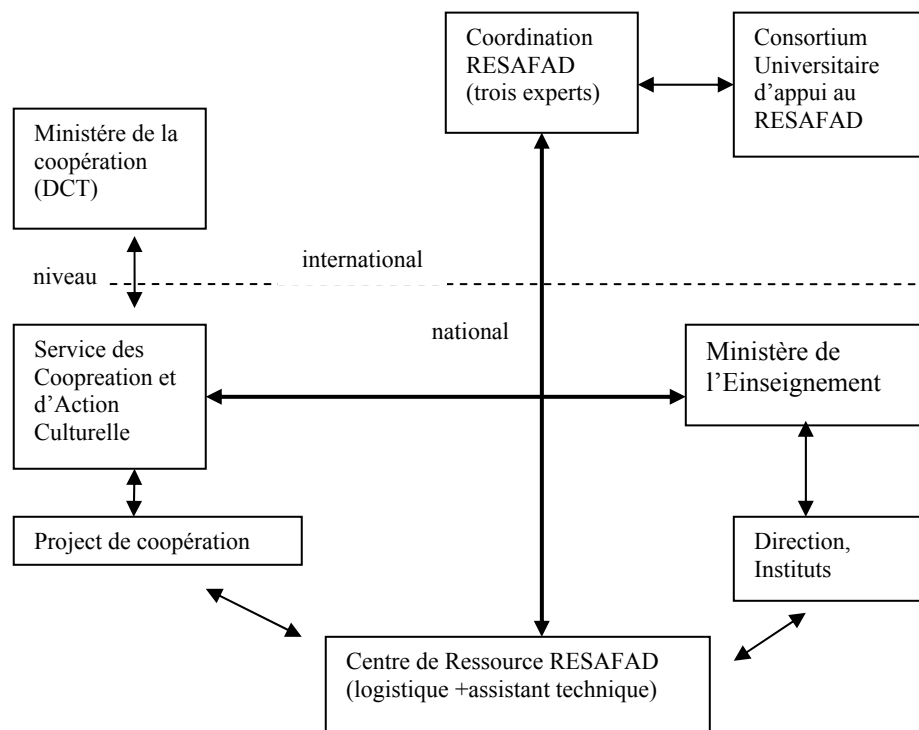
Key: Ministère de la coopération (DCT) = Ministry of Development Cooperation (DCT)

Coordination RESAFAD (trois experts) = RESAFAD coordination (three experts)

Consortium Universitaire d'appui au RESAFAD = Inter-university RESAFAD Support Consortium

Ministère de l'Enseignement = Ministry of Basic Education

Directions, Instituts = Directorates, Institutes

Centre de Ressources RESAFAD (logistique + assistant technique) = RESAFAD Resource Centre (logistics + technical assistant)

Projet de cooperation = Cooperation project

Service de Coopération et d'Action Culturelle = Department for Cooperation and Cultural Affairs

Niveau = level

In Burkina Faso, the Basic Education Support Project was ratified as part of a bilateral agreement in September 1996. Its founding document singled out distance education for headteachers as one of the two main courses of action to be taken within the framework of the teacher-training component. The total budget came to FFr 650,000, together with an additional FFr 50,000 to cover Internet-related charges for the project's four-year life span.

In an introduction entitled 'Why headteachers need training', the document setting out the basis for the Headteacher Distance Learning Programme in Burkina Faso – *Draft action: Distance learning for headteachers* – states that headteachers 'occupy a strategic position in a context where young teachers are taking up posts without proper grounding. Moreover, the tendency towards decentralised authority, combined with new perceptions regarding of education and the call for grass-roots communities to take charge of running schools, have led to principals being entrusted with new responsibilities and, hence, a greater workload. On top of their regular duties, they are becoming managers who, in a spirit of partnership, must generate, manage and plan resources in such a way as to make school into a bona fide place of development-oriented learning.'

Given the large numbers of principals in need of training (2,000-4,000 in each of the countries concerned), distance learning was seen as the only economically viable response to that need. It was also considered an effective means of overcoming geographical and time-related constraints, especially in Burkina Faso where some headteachers are working at schools located a long way from the nearest district basic-education centre. Attending courses in person would have meant travelling to the district capital and, hence, abandoning their posts for days or even weeks at a time.

Purpose of the Programme

The Headteacher Distance Learning Programme has sought to promote local management capacity-building and to provide headteachers with in-service training. The aim was not just to upgrade their qualifications, since the vast majority of those working in Burkina Faso perform their duties in a wholly empirical manner. Indeed, the District Inspector appoints headteachers without them having had any training beforehand.

The Headteacher Distance Learning Programme has covered a varied range of subjects: educational methods, teaching, school management practices, knowledge of educational principles and values, interaction with one's surroundings and local development. Modules were divided into five themes: acting as facilitator for a group of teachers, sound management practices, maximising human resources, school activities and safeguarding educational values.

Table 12.4: Headteacher Distance Learning Programme

Phase	Year	Developers trained	Modules produced	Modules disseminated
Pilot project	1997-1998	5	1	1
Extension 1	1998-1999	6	8	5
Extension 2	1999-2000	8	7	3
	2000-2001	0	11 (ongoing)	0

The national team designing the distance-learning system and tools was given complete freedom to choose what it regarded as the key modules from the list or to add any necessary new ones.

More modules were produced than were disseminated. Indeed, while the team validated a total of 16 modules, only nine were delivered to students: one in Phase One (1997-1998), five in Phase Two (1998-1999) and three in Phase Three (1999-2000). This was because the project mainly aimed to create a core of developers capable of sustaining competence

within the institution, and to foster the involvement of the various departmental and branch managers. The aim was to set up a training programme over several years based on the implementation of a network of tutors trained as learning-group facilitators. But the longer-term goal was that once the programme had been fully implemented, efforts would be made to construct a training-resource bank that headteachers could access from their school. The modules produced by the Burkina Faso design team were passed on to other RESAFAD country teams so that this output could be fed into the planned resource bank.

Nature and Educational Background of the Target Audience

Headteachers in Burkina Faso are either Certified Teachers or Head Teachers, i.e. holders of professional qualifications. Qualified Head Teachers, who account for an estimated 10 per cent of the learner audience, serve as principals in schools with more than six classes. Yet their training at the Ecole de Contrôle et d'Animation Pédagogique does not give them proper grounding for the role.

Headteachers have an extremely variable level of education, ranging from the BEPC certificate taken at the end of junior secondary school to, in very rare cases, a university degree. There is no written rule regarding training nor, indeed, any law or decree that makes it mandatory. District inspectors nevertheless appoint headteachers by designation. The distance-learning programme responds to the strong demand expressed by acting headteachers who have never received any special training.

Table 12.5: Number of Participants

Phase	Year	Regions	Districts	Headteachers
Pilot project	1997-1998	1	2	70
Extension 1	1998-1999	3	30	920
Extension 2	1999-2000	4	34	1,275

The pilot project phase set out to assess the validity of the options selected by the national design team and to ensure that the proposed training methods and tools would be clearly understood and well received.

Table 12.6: Gender of Participants

	Women		Men	
Region	Number	%	Number	%
Central	169	28	428	72
Eastern	9	5	174	95
Hauts Bassins	40	14	239	86
Northern	4	2	262	98
TOTAL	222	17	1103	83

The above table has been produced using incomplete data as a full survey could not be conducted due to a lack of adequate delivery services. Nevertheless, it does point to the significantly higher percentage of women in urban areas: the Burkinese capital city, Ouagadougou, is situated in the Central region and the second biggest, Bobo-Dioulasso, lies in the Hauts Bassins region. The greater percentage of women working in primary education in urban areas ties in with the policy of bringing married couples closer together

whereby many civil servants manage to have their wives appointed to posts in the towns where they work.

Organisational Model

The Headteacher Distance Learning Programme forms part of the sub-regional deployment of RESAFAD infrastructure (Internet-linked resource centres), hardware and software (training premises equipped with ten computers and a server) and staff (technical assistants specialising in distance education and ICT). Originally, the plan was to run a synchronous programme to train designers in the countries concerned (Burkina Faso, Guinea, Mali, Togo and, from 1997, Benin) in how to use the new technologies and design distance-education systems and tools. It proved unworkable, however, due to an uneven pace of deployment: Togo's resource centre was set up in May 1997, Burkina Faso's in November 1997 and Guinea's and Mali's in 1998. Methodological training called for an exchange of background documents (specifications, graphic design scheme, modules list, and so on) in order to foster synergy between the various national teams. All of the modules produced were communicated, exchanged and, in June 2000, compiled on a CD-ROM (so that they might serve as a core resource for each team). This did not, however, adhere to a general, jointly prepared, model. Modules therefore tended to differ in content and form: size, layout, types of exercises, methods of use, and so on. RESAFAD technical assistants passed them on to their counterparts in other countries, but there was no direct contact between the various countries' designers.

A number of pointers for further analysis may be identified.

- 'Distance cooperation' became a new, groundbreaking concept for designers. At the time of the programme's initial deployment in 1996, little – if anything – was known about the realities and challenges of the Internet in most of the countries concerned, where it was regarded as complex and abstract.

- Efforts to form a community of sub-regional designers were undermined by the above-mentioned inability to synchronise. As such, each country team worked on its own context. Beyond exchanging their output, they did not maintain any real contact, discussions or dialogue.

- The need to deliver hard and fast results within the framework of a national project of limited duration reduced the goal of building a genuine sub-regional network of designers to a matter of secondary importance.

- Efforts to develop such a regional dimension were hindered by the fact that RESAFAD, in each country, had the status of a sub-programme within the framework of a local French Cooperation project.

RESAFAD experience in this field should be seen as pioneering. Despite limited results in terms of communication and a genuine network-building dynamic, the programme has definitely helped promote the development of a distance-cooperation model.

As far as strategic recommendations are concerned, now that conditions have rapidly improved with the spread of the Internet, distance cooperation and network-building, it might be advisable to place – and keep – efforts to build a network at the top of the agenda. Such efforts are facilitated within the framework of sub-regional or international

projects implemented by multilateral organisations, as opposed to the insular structure promoted, essentially for historical reasons, by French Cooperation.

In Burkina Faso, the Headteacher Distance Learning Programme was implemented within the framework of a bilateral Franco-Burkinese project geared to cooperation in the field of education – the Basic Education Support Project. This project supplied a large share of the material, human and financial resources needed to support learners. RESAFAD provided additional technical and methodological assistance. Responsibility for running the programme, however, remained in the hands of the Staff Training Service, a technical branch of the MEBA.

A Headteacher Distance Learning Committee was set up in October 1996, chaired by a coordinator and composed of specialists in curriculum development and the target audience: inspectors, educational consultants and experienced headteachers.

Managers of the Headteacher Distance Learning Programme belong to the MEBA's Staff Training Service. The committee coordinator is the service official in charge of distance education.

The inspectors and educational consultants selected to oversee the design of the learning system and tools come from the Ecole de Contrôle et d'Animation Pédagogique, the Burkina Teaching Institute and the National Primary Teacher Training Colleges (ENEPs). National experts involved in the pilot project were based in the capital, Ouagadougou. Designers for the 1999 and 2000 extension phases were recruited from ENEPs in the cities of Bobo-Dioulasso, Fada N'Gourma, Loumbila and Ouahigouya, which also supplied staff to produce learning materials and supervise the training of instructors and education of headteachers. This change in the way course designers are recruited and trained has been underpinned by a determination to decentralise the system and foster intercommunication among teacher training establishments. That determination is set to be further enhanced through the creation of an Internet portal also geared to enabling them to pool methodologies and resources.

Relationship With Other Parts of the Education Service

Many distance-education programmes find it difficult to survive because they are not integrated into the existing education service. By contrast, the Headteacher Distance Learning Programme draws on several parts of the existing education service and makes use of existing expertise, structures and facilities.

Central Services

The Staff Training Service may be a technical branch rather than a general directorate, but it is still one of the central services of the MEBA. The Ecole de Contrôle et d'Animation Pédagogique (ECAP) is attached to the Staff Training Service, the latter's director also being head of the former. Three ECAP teachers belong to the team of national Headteacher Distance Learning Programme designers.

The Burkina Teaching Institute (IPB) is an MEBA general directorate. It was involved in discussions on the programme's implementation from the outset. Indeed, its director was a member of the Committee that drew up the founding document, 'Draft action: Distance learning for headteacher*s*'. An IPB representative is also among the members of the Headteacher Distance Learning Programme design team.

The Department of Human Resources and General Directorate of Basic Education each sent an observer to follow the methodological and technical training courses for distance-learning module designers. The Directorate for Research and Planning did not, but one of its agents co-produced a module entitled 'Annual survey of primary-education statistics', copies of which have been distributed to every headteacher in Burkina Faso.

National Primary Teacher Training Colleges

National Primary Teacher Training Colleges (ENEPs) have been established in four cities around the country. The Loumbila ENEP sent one of its teachers to join the Distance Learning Committee in 1996-1997 and take part in the methodological and technical training courses in 1997-1998. Recruitment for the second phase of training for Headteacher Distance Learning Programme tool designers primarily targeted people working as ENEP teachers. This strategy was geared to:

- fostering ENEP staff awareness of distance-learning methods and techniques for continuing education
- developing ENEPs' capacity to create distance-learning systems and tools
- paving the way for ENEP networking by promoting staff skills and abilities in the use of ICT.

Regional Directorates for Basic Education and Literacy

The Regional Directorates for Basic Education and Literacy of the Central, Eastern, Northern and Hauts Bassins regions played a direct role in implementing the Headteacher Distance Learning Programme. These are the regions where the programme was deployed during the 1998-1999 and 1999-2000 extension phases. The Regional Directorates were in charge of organising instructor training.

Provincial Directorates of Basic Education and Literacy

The Provincial Directorates for Basic Education and Literacy of the Central, Eastern, Northern and Hauts Bassins regions of Burkina Faso were also directly involved in the programme's implementation. District inspectors and their educational consultants received Headteacher Distance Learning instructor training. They led the learning-group meetings that took place during the 1999 and 2000 campaigns. The Provincial Directorate of Oubritenga played a key part in the programme from the beginning – it was involved in the pilot project phase, involving around 30 headteachers, together with the administrative district of Ouaga V.

A total of 19 Headteacher Distance Learning Programme tool designers have been trained: five in 1997-1998, six in 1998-1999 and eight in 1999-2000. The first year's trainees were based in the capital, Ouagadougou. Subsequent sessions extended to District Inspectors and National Primary Teacher Training College staff working in Bobo-Dioulasso, Fada N'Gourma (Eastern region) and Ouahigouya (Northern region).

Implementation

Various aspects of the implementation of the Headteacher Distance Learning Programme are described below.

Materials Development

The development of materials mainly revolved around the production of distance-learning modules. National designers selected modules through mutual consultation. Designers worked alone or in pairs. They drafted their texts by hand and then passed them on to someone else for data entry. Most, however, used desktop tools. The hardware needed to enter texts was located at the RESAFAD resource centre or Basic Education Support Project headquarters. The project also equipped National Primary Teacher Training Colleges in the cities of Loumbila and Bobo-Dioulasso with computers. A number of designers, though, used equipment of their own or made available to them at a number of Ministry offices.

Headteacher Distance Learning Programme modules are notional units, each of which deals with a specific aspect of the headteacher's role. They are all in French, the official language of Burkina Faso. Every headteacher enrolled on the course was familiar with and had a good command of French. Each module was produced in line with specifications issued by the Headteacher Distance Learning Committee.

Coursebooks had to be no more than 16 pages long. The graphic design scheme specified the page layout and the typefaces of headings and sub-headings, as well as the information that should appear in the headers and footers on every page. The coursebook also had to adhere to a standard format. On the cover is the module title and contents, together with a suggested learner's work plan. This is followed by an introduction containing the course objectives. Then there is a pre-test designed to enable the learner to assess his or her knowledge of the main points covered in the module. Answers to the questions posed must become apparent as the learner follows the successive stages in the coursebook. These stages are laid out in the contents. They can subdivide into two, three or four sections, depending on how the designer believes the module's subject matter needs to be tackled. Each section also includes paragraphs entitled 'Memo', 'Think-discuss' or 'Self-assessment'. These paragraphs appear wherever it is considered useful for learners to have the subject summarised, committed to memory or where they need to give it more thought and assess their own progress. A 'memo' paragraph sums up the main ideas or concepts to be learnt from the chapter in question. A 'think-discuss' paragraph gives the learner food for thought or more in-depth research on the chapter's content, the aim being to encourage headteachers to make a connection with their own working environment. A 'self-assessment' paragraph offers exercises (multiple-choice questions) geared to enabling learners to gauge the extent to which they have managed to absorb the ideas covered in the chapter. Answer sheets appear on the back pages.

Each training module also includes a case study with a series of questions designed to make the learner think and to stimulate discussion during group tutorial sessions.

Once a designer or team of designers have produced a training module that meets the required specifications, that module is submitted to the Editorial Board for ratification. Ratification is equivalent to institutional accreditation. The board meets once or twice a year, depending on the needs and progress in production work. It is chaired by the head of the Staff Training Service and includes the Headteacher Distance Learning Programme coordinator and module designers. Once ratified, the module is incorporated into the body of those that have already been released. Depending on the year's learning plan, as many as a several thousand copies can be published with the backing of the Basic Education Support Project and its technical staff.

Dissemination of Training Materials

Modules are handed out during the training of local group instructors. All the inspectors, educational consultants and headteachers of the various districts take part in these training sessions. Surveys carried out at the beginning of the year serve to determine how many modules will be required for the year's batch of learners.

The Basic Education Support Project supplies the resources for printing the modules to be proofread and submitted to the Editorial Board, as well as for producing the required number of copies of each ratified module with reprographic copying equipment (which has also served to produce material for purposes other than the Headteacher Distance Learning programme). The Project employs a qualified technician to take charge of operating this equipment, binding the documents and other services. At the end of their training, instructors take the bound modules away with them to be delivered to the headteachers taking part in the programme (at the initial group meeting held in the district town or school deemed to be most accessible to the largest number of participants).

Instructor Training

Instructors are nominated by District Chief Inspectors and selected from the ranks of that district's educational supervisors (Primary School Inspectors, Head Teachers and experienced headteachers) when the programme audience survey is carried out at the beginning of the year.

Annual sessions of the Headteacher Distance Learning Programme open, in each of the regions concerned, with a two-day course for instructors delivered by the designers of the distance-education system and tools. After a general introduction to the system, instructor training goes on to cover:

- the instructor's role (administrative and educational)
- the module (notional content, self-assessment, actual studies)
- tutorials
- assessment (tutorials, learners, system).

During their training, each instructor receives a Headteacher Distance Learning Guide that deals with various aspects of the distance-learning programme.

Annual training sessions are aimed at the new instructors joining the system for the first time to replace those leaving on transfer or retiring.

Arrangements for Teaching Practice and its Supervision

The distance-learning module is the key tool of the distance-learning system. Module study time is estimated at around 15 hours over a period of three weeks.

Participating headteachers are brought together for a preliminary group meeting in the district capital where they receive their training modules and information regarding programme methodology. A follow-up session is being planned to enable them to compare notes on their experience (in their professional lives and coursework) and to exchange points of view regarding the self-assessment exercises and actual studies proposed in the modules. The idea of holding a follow-up session arose during the pilot project phase (1997-1998) and first extension (1998-1999). For budgetary reasons tying

in with the strategic decisions of the Basic Education Support Project coordinators, however, it has yet to be put into practice.

Table 12.7: Number of Course Designers, Instructors and Participating Headteachers

Phase	Year	Designers trained	Instructors trained	Headteachers on the course
Pilot project	1997-1998	5	10	70
Extension 1	1998-1999	6	123	920
Extension 2	1999-2000	8	156 (120 new)	1,275

The training of an initial group of five module designers in 1997-1998 culminated in the production and validation of the first module on the financial and material management of primary schools. Ten instructors (educational supervisors and experienced headteachers) were trained in three districts. The pilot project, which involved 70 headteachers, took place in two districts of the Central region of Burkina Faso.

The 1999 extension phase covered three whole regions: the Eastern, Central and Hauts Bassins regions (a total of 30 administrative districts). It called for the training of 123 instructors, and 920 headteachers of schools with three or more classes took part. Six new designers underwent methodological and technical training at the RESAFAD resource centre and the Primary Teacher Training College in the city of Bobo-Dioulasso. Eight new modules were designed and validated. Five modules were distributed to the headteachers.

In 2000, the programme continued throughout the same three regions as in 1999 and was extended to the province of Yatenga in northern Burkina Faso. Once again, it involved the participation of headteachers of schools with three or more classes. This time, however, 1,275 headteachers took part and received three new modules. This campaign called for the recruitment of 156 instructors (120 newly trained and 36 who had already received training in 1999). Eight new designers were trained and seven new modules were designed and validated.

2001 marked the end of the action plan established in 1997. With the Basic Education Support Project having reached its conclusion, the programme was now deprived of the funding enjoyed by the earlier campaigns. Despite the interest shown by a number of donors, no further action has taken place. Eleven modules are nonetheless being prepared and French Cooperation's National Education Support Project has resolved to ensure that a wider audience of headteachers continues to benefit from distance learning.

Assessment and Accreditation

Module designers were selected by the MEBA Staff Training Service (DFP). RESAFAD took charge of their methodological and technical training, accredited with a certificate jointly issued by the DFP and the Burkinese branch of RESAFAD.

Instructors need to be trained so that they have the necessary skills and abilities to moderate a tutorial group of headteachers. That said, their training is not subject to assessment and they do not receive a certificate. But the fact that they have completed the course is recorded, and local supervisors who have taken part in it are registered by the Staff Training Service.

During the work of the Headteacher Distance Learning Committee, attention inevitably turned to the validation and certification of the training course. Given the complexity of existing teacher-education qualifications, as well as uncertainties surrounding the effectiveness of new methods (distance learning, self-tuition) and the experimental nature of the programme, the team decided not to grant any formal recognition that would be unlikely to materialise within the education system through the – undoubtedly desirable – creation of an official status for headteachers. Besides, final official assessment did not form part of the programme's original plans. Introducing a professional examination could have sparked claims for official status and an overhaul of the staff pay scale.

Thus far, 25 per cent of in-service headteachers have taken part in the programme, and 10 training modules have been released. So the Headteacher Distance Learning Programme is not yet finished in Burkina Faso. The Staff Training Service is planning to develop a certificate to principals graduating from the programme. However, the lack of formal recognition clearly has not deterred headteachers from wanting to join the programme. Their high degree of motivation stems from an awareness that they really do need training. This situation may be specific to Burkina Faso. Differences can be observed in the other participating countries.

Technologies

RESAFAD project coordinators have used a wide range of Internet communication tools. Exchanges have always taken place at international level through the intermediary of technical assistants. This situation should continue to develop as designers become increasingly skilled in the field of ICT. Some national module designers have been using e-mail to forward electronic copies of their output. The modules produced in Burkina Faso have all been designed on computers. These files have been included in the RESAFAD coordinators' CD-ROM compilation.

Table 12.8: Use of Technologies in Course Design and Production

Technology	Level	Framework	Participants
e-mail	National	Headteacher Distance Learning Programme	National designers, RESAFAD technical assistant
	International	RESAFAD Coordination	RESAFAD technical assistants and coordinators
Listserv	International	RESAFAD Coordination	RESAFAD technical assistants and coordinators
	International	RESAFAD Coordination	RESAFAD technical assistants and coordinators
Mail	International	Headteacher Distance Learning Programme ('Annual statistics survey' module)	National designers, education statistical experts, RESAFAD technical assistant
Web	International	RESAFAD Coordination	
CD-ROM	International	Headteacher Distance Learning Programme	RESAFAD technical assistants and coordinators, designers

The choice of learning technologies formed the subject of in-depth preliminary analysis conducted during the methodological training of national designers. Existing media

were assessed according to familiarity, accessibility, appeal and how well-suited they were to course content. Accessibility and cost were the main constraints impeding the introduction of technologies into the distance-learning system. What could be regarded as everyday technologies were not viable for headteachers in Burkina Faso. Most of those working in remote villages did not even have access to a radio-broadcasting network or electricity. National designers were therefore left with no alternative but to opt for the use of printed learning materials.

Given the unreliability of postal services in the Burkinese bush, however, even the option of correspondence courses had to be ruled out: it would not have been worth mobilising the sizeable resources necessary without a guarantee of genuine interactivity. As such, the team decided that the only viable solution would be self-tuition backed by regular group sessions.

The idea of introducing differing levels of media use for different sub-groups (identified by geographical and technological criteria) was dropped for fear of adding to existing disparities, fostering a sense of frustration and indulging in costly and limited trials.

There was no change in the choice of technologies during the course of the project's development. It was suggested that radio broadcasts might be introduced as a means of providing additional support in certain areas, but these did not materialise. A number of modules formed the subject of programmes broadcast on the School Radio channel by the Burkina Teaching Institute's audiovisual production service. This impromptu use of learning tools is somewhat incidental, as no attempt has been made to gauge its impact.

Costs

French Cooperation was the only funding agency supporting the Headteacher Distance Learning Programme (within the framework of the Basic Education Support Project). It is hard to make a true cost assessment of the programme because it formed part of a bilateral Franco-Burkinese cooperation project and was classed as belonging to the realm of public accounting. Projected budget estimates for French Cooperation projects are divided into five sections: material investments; financial investments; training; supplies; short-term missions.

Preliminary meetings to prepare the learning system involved managers from the MEBA, but no records of related costs were kept since the work was being done during office hours. The Basic Education Support Project supplied allowances and other payments for the production of modules and participation in programme activities and Editorial Board sessions.

The Project's financial reports include costs relating to the training of designers and instructors, the tuition of headteachers, Editorial Board meetings and supplies. Although no funds had been earmarked for the purpose, assessment missions had to be carried out in order to meet the headteachers during the pilot project phase. French Cooperation technical assistants and Ministry managers were required to put many hours of work into drafting, distributing, completing, collecting and analysing questionnaires during the 1998-1999 campaign. The project's accounting procedures therefore make it difficult to establish the actual costs of the learning programme.

The Burkina Faso Headteacher Distance Learning Programme was originally allocated a budget of FFr 650,000, some FFr 110,000 of which was used to set up a RESAFAD resource centre at Ouagadougou University. An additional FFr 50,000 was earmarked to cover Internet connections for communication between national teams of designers in the various countries belonging to the RESAFAD network.

The costs of implementing the programme between 1997 and 2001 were as follows:

1997-1998: around FFr 10,000
1998-1999: FFr 128,081
1999-2000: FFr 108,981
2000-2001: FFr 14,389

The cost of implementing programme activities therefore came to FFr 371,451 – 57 per cent of the initial budget. Further expenses, such as those incurred by short-term missions for deploying the learning system, need to be added to that total; the exact amount has been impossible to calculate, but it cannot have exceeded FFr 100,000. This means that only 75 per cent of the initial budget was accounted for. So it would certainly have been possible to pursue the programme's activities for at least 1,500 headteachers during the course of the year 2000.

This study has set out to enable comparison between the implementation of conventional training courses and that of a distance-learning programme, with a particular emphasis on the costs associated with the latter. These divide into investment and operating expenditures in every area of a distance-education system: management, production, module dissemination, tuition and support, and assessment.

Table 12.9: Investment and Operating Costs

Area	Investment (FFr)	Operating costs (FFr)
Management	4,500	9,600 per year
Production	45,000	5.5 per module
Modules (10)	13,000	
Dissemination		3,900 per year
Tuition	18,000	50 per headteacher and per group

Management Costs

Investment costs here stemmed from the need to build a team of designers whose job, in 1996-1997, was to set out the plans in a founding document describing the system and its implementation. This called for 15 or so working sessions involving a 10-member committee. Each session lasted about three hours. No allowances or any other forms of remuneration were paid. Committee members at the time were earning an average monthly wage of around FFr 1,600. The cost per person per hour therefore came to FFr 10. So the work of devising and designing the system can be costed at around FFr 4,500. Once the programme was underway, administrative tasks were delegated to two committee members who spent half of their working hours on them over a period of six months (at a cost of around FFr 9,600 per year).

Production Costs

Programme modules and the instructor's manual were produced using computers at three production sites. Each machine cost FFr 15,000, giving a total investment of FFr 45,000.

Module designers were paid a sum of FFr 1,000 for each module. Completed modules were examined during content approval meetings attended by 10 participants, each of whom was earning the same wage as the above-mentioned Distance Education Committee members. While the first modules produced took around four hours to ratify, this time subsequently fell to around two hours as the Committee honed its procedures and, with the designers gaining in experience, fewer comments needed to be made. The cost of ratifying the modules, at an average of three hours per module, came to FFr 300 each.

Module production involved operating as well as investment costs. The Basic Education Support Project acquired reprographic copying equipment for around FFr 40,000. The Headteacher Distance Learning Programme financed 50 per cent of the 1.1 million copies produced. The cost of printing the modules (5,000 in 1999 and 15,000 in 2000) breaks down to a basic rate of FFr 2 per module. Expenditure on supplies (paper, staples, ink, master copies, and so on) and labour (with wages for the four six-hour days needed to print 1,000 copies at FFr 50 per day) worked out at FFr 3.5 per module. So the unit cost of producing each module came to around FFr 5.5.

Dissemination Costs

Modules were disseminated during the instructor training sessions in each of the regions where the system was being deployed. Estimates nevertheless have to be made of the cost of transporting the modules to the Regional Directorate. The cost of transporting the modules from the Regional Directorate to the District Directorate, however, will not be taken into account because of the number of opportunities that district managers had – within the framework of their regular activities – to pick up modules stored at the Regional Directorate. The Basic Education Support Project provided transport at a cost of around FFr5 per kilometre.

Transport costs came to around FFr 1,800 per campaign for Bobo (Western region), FFr 1,100 for Fada (Eastern region) and FFr 1,000 for Ouahigouya (Northern region), giving a total of FFr 3,900 per campaign. Other, more economical, modes of transport such as forwarding services could be used.

Tuition Costs

Establishing support services for those enrolled on the Headteacher Distance Learning Programme called for investment in the training of instructors: 123 of them in three locations in 1999 at a total cost of FFr 17,130 (with eight students per instructor, around FFr 18,000 per 1,000 participants). Each tutorial session cost around FFr 50 (for the participants' transport and training allowance, and the instructor's wages), that is FFr 50,000 for every 1,000 headteachers trained. Two tutorial sessions were arranged during the initial implementation phase (1999). Just one took place during the second phase (2000).

Assessment Costs

Assessment of the 1998 pilot project, which involved 60 headteachers, was carried out through interviews. Assessment of the 1999 extension to 920 headteachers in three regions was based on questionnaires submitted to the instructors. The tasks of conducting interviews and drafting/analysing questionnaires were carried out within the framework of programme management.

Cost Comparison With the Conventional System

It is hard to make a comparative study of costs because there is no conventional in-service training for teaching staff in Burkina Faso. As part of the Basic Education Support Project (PAEB Component 2: Establishing a new Basic Education Information System), a day-long seminar was organised for all 4,200 of Burkina Faso's headteachers. The total cost of the operation came to around FFr 360,000. Those in charge decided to capitalise on the money and effort that had gone into preparing and staging the event by ordering the production of a distance-learning module entitled 'Annual statistics survey'. Organising such a seminar can be said to have cost in the region of FFr88 per headteacher. It can also be said that a distance-learning module on which an individual is reckoned to spend an estimated 15 hours of work is equal to one day of conventional classroom training.

In the absence of in-service training for teachers and headteachers, comparison with the conventional learning system calls for estimates to be made in line with certain known costs. The following table shows the cost of implementing a conventional course according to the number of headteachers per group. The tutorials set up within the framework of the distance-learning programme placed eight headteachers under the responsibility of a specially trained instructor, thus ensuring that exchanges between those headteachers would be of the best possible quality. The scenarios presented below are based on groups of between eight and 40 headteachers, and the training of 1,000 headteachers over the course of five days (the equivalent of five distance-learning modules).

Table 12.10: Estimated Costs of Conventional Training

Number of headteachers per group	8	16	24	32	40
Number of instructors	125	63	42	32	25
Headteachers' allowances (FFr)	45,000	45,000	45,000	45,000	45,000
Instructors' pay (FFr)	6,250	3,150	2,100	1,600	1,250
Cost of tuition per day (FFr)	51,250	48,150	47,100	46,600	46,250
Cost of tuition for 5 days (FFr)	256,250	240,750	235,500	233,000	231,250

These estimates are far from complete. Indeed, they do not include the cost of the headteachers' accommodation for the duration of the five-day course. Nor do they show any details regarding the preparations (producing a guide, training the contributors). The table below provides a reminder of the costs of implementing a distance-learning campaign for an audience of around 1,000 headteachers, disseminating five modules and staging two tutorial sessions.

Table 12.11: Investment and Operating Costs

	Investment (FFr)	*Operating (FFr)*
Management	4,500	9,600
Production	45,000	
Modules (5)	6,500	27,500
Dissemination		3,900
Tuition	18,000	100,000
TOTAL	74,000	141,000

The total of investment and operating costs (FFr225,000) is less than the partial estimate of what it would cost to run a conventional training course for groups of up to 40 headteachers.

Outcomes

The Headteacher Distance Learning Programme gave rise to a good deal of confusion, if not serious doubts, among both national managers and the technical assistants associated with its implementation. This was due to the excessive degree of importance attached to the use of ICT – above all the Internet for the various national teams to relay their results – and the negative feelings in neighbouring countries that had experimented with learning technologies. This is obviously not the place to discuss the rights and wrongs of such views. It is worth pointing out, however, that the idea of introducing ICT aimed to encourage the headteachers of Burkina Faso and the other RESAFAD participating countries to sit down in front of a computer and train themselves has proved remarkably enduring. The modules produced using those technologies constitute a body of documents that have stimulated some interest. These mutually respected, though not necessarily jointly conceived, modules have been compiled on a CD-ROM.

Evaluating the Programme

The doubts and reservations referred to above have deprived the programme of the ability to demonstrate its effectiveness through the results of an official evaluation. That said, it has been able to benefit from a range of unofficial assessments.

The pilot project phase set out to test the methods and tools devised by the programme design team on a sample audience of 70 headteachers working at schools in two Central region districts: Oubritenga and Ouaga V. A single module was distributed for the learners to study over a period of three weeks and one group meeting took place, led by a specially trained instructor. Interviews conducted at the end of the trials showed that the audience had a high opinion of the tool and had adhered to the suggested methods. These interviews served to determine how to pursue and extend the programme.

The first extension phase involved 920 principals divided into 120 groups across the Central, Eastern and Hauts Bassins regions (30 districts in all). Evaluation of this phase hinged on a questionnaire distributed to the learners, together with directions for the instructors. Data obtained from the questionnaires confirmed that the vast majority of learners appreciated the tools and had adhered to the suggested methods of working.

The nine modules disseminated during the 1998-1999 and 1999-2000 campaigns attest to the nature of the objectives pursued within the framework of a distance-learning

programme geared more to equipping headteachers with instrumental (functional and relational) skills and abilities than to upgrading their knowledge. The true impact of this programme would be better determined via a systematic assessment of the headteachers who have taken part and of the people around them in their working environment (superiors, subordinates, local contacts, pupils' parents, and so on). Surveys conducted in the field by teams using sociological methods would constitute a more effective means of measuring the actual effects of the training than institutional examinations. Although plans to carry out such surveys were included in the programme's original founding document, they did not materialise because the budgetary decision-making of the Basic Education Support Project coordinators failed to allocate the necessary funding, as we shall see later on.

The effectiveness of the distance-learning system is reflected by the extremely small number of headteachers dropping out of the programme and the high number of objectives met in terms of the dissemination of tools and participation in group meetings – although it has to be said that each principal attending those meetings had their travel expenses covered and was paid an additional training allowance of FFr 25. District inspectors' reports point to an improvement in the quality of service provided by headteachers who have taken the distance-learning courses: better organisation, better kept school records, higher quality reports and correspondence, and so on.

It is, of course, regrettable that the impact evaluation procedures laid down and budgeted for in the founding document were never put into practice. They would probably have served to highlight the programme's relevance and secure its sustainability. Furthermore, field assessments carried out by teams employing tried and trusted sociological techniques definitely do represent an interesting prospect. They provide an opportunity to gain insight into how the programme influences the headteachers' social role and how boosting skills and abilities at grass-roots level affects the way school is perceived and portrayed by local communities. The interviews conducted pointed to an improvement in the headteachers' office management skills and their ability to communicate with staff at senior and junior levels of the education system.

The programme appears to have helped promote the recognition and use of distance-learning techniques and ICT, as well as the building of distance-cooperation networks. Reservations about – and opposition to – the concept of distance learning have definitely dwindled since its launch in 1996. Two new projects involving distance learning and ICT are currently being implemented in Burkina Faso. National Primary Teacher Training College networking has been included in French Cooperation's plans for a National Education Support Project. Such a nationwide network of people who know one another and share clearly identified concerns will attract a great deal of commitment. Indeed, national Headteacher Distance Learning Programme designers have witnessed the introduction of several innovations in their working practices: distance education, ICT and distance cooperation.

Other experiences have shown how useful it can be to pool skills and abilities via the Internet for sub-regional projects and capacity-building in a number of different countries. RESAFAD, for instance, conducted more than a year of trials (between 1999 and 2000) on an Interactive Planning Managers' Seminar. Internet communication tools (e-mail, websites, forums, and so on) were made available to education planners and statisticians working with, among others, the Association for the Development of Education in Africa in countries where RESAFAD had set up a resource centre. The way had already been paved towards

this virtual community over the course of regular international seminars, and the trials helped maintain the contacts and exchanges. In June 2000, an online discussion on the Headteacher Distance Learning Programme's 'Annual statistics survey' module led to a number of improvements to the document. This module was subsequently disseminated in Burkina Faso in order to significantly reduce survey costs: FFr 300,000 a year was being spent on headteacher awareness campaigns. In spring 2001, the Interactive Planning Managers' Seminar began working on ways to facilitate coordination of a UNESCO/ IIPE survey on the multi-grade class system in several African countries.

Impact

This programme has above all responded to a real need on the part of an audience previously denied any formal, practical grounding. Many headteachers have expressed satisfaction at the introduction of a system geared to reversing that situation. They appreciate how it has, among other things, helped improve their performance while increasing their influence on their working environment and giving them a springboard for upgrading their professional qualifications.

Interviews were conducted with headteachers who had taken the distance-learning courses, instructors, the inspectors who supervised the programme's implementation and observed its initial impact, the Basic Education Support Programme coordinators and the head of the Staff Training Service of the MEBA. Parents and teachers of pupils attending the schools of headteachers on the programme could not, however, be interviewed.

The interviews with five headteachers in Ouagadougou and Bobo-Dioulasso revealed the following.

- The learning system was regarded as efficiently organised, with a curriculum tailored to their educational needs and offering knowledge direct relevant to their work, and appropriate methods (even if it meant having to change habits and overcome a certain amount of reluctance). When highly motivated, headteachers appear to have had no trouble coping with self-tuition.

- Group meetings have played a key part in enabling participants to grasp key concepts, share experiences, exchange ideas and take a fresh interest in certain subjects covered by the curriculum.

- There have been real changes in the way schools are run and the work is organised, as well as in material, financial and time management.

- Headteachers completing the courses have become more self-confident as a result of having gained more effective control over their working environment. This has resulted in them being more attentive and open to dialogue, and more at ease in leading teachers' committee meetings and so on.

- School projects have a better chance of being properly implemented and followed through.

- Headteachers are channelling the experience gained through the programme back into their working practices, personal lives and related activities.

- There is great demand for a relaunch of the programme to cover all headteachers in Burkina Faso.

Group sessions constituted a key component of the programme, enabling participants to take part in discussions, make comments, air differing points of view, convey their experiences, and so on.

The programme has been of benefit to headteachers of private schools who had no previous basic training. Deputy headteachers have shown an interest in – and sought to procure – the learning materials. It was pointed out, however, that the system lacked uniformity. New principals appointed to new schools have received neither the instruction nor the modules.

Some headteachers felt that financial support (of 2500Fcfa for each attendance at a tutorial) was a problem, having helped spread a bad habit of paying the people to join the programme.

One district inspector noted improvements in the performance of headteachers who have taken the courses, including organisation, time-management, school administration, record-keeping).

The French coordinator of the Basic Education Support Project reported that 'the Headteacher Distance Learning Programme initiated by RESAFAD has undergone significant development in terms of the production of tools and those taking the courses. The strategy introduced in 1996 has been stabilised. The quantitative and qualitative report reflects this success:

- 25 per cent of acting headteachers have taken the courses (not the numbers anticipated but nonetheless a good start)
- the methodology has been perfectly assimilated and mastered by national experts
- the learning materials have been adapted, contextualised and made available throughout the sub-region (16 modules produced by 2000 and 11 awaiting validation)
- real national expertise has been developed (designer/trainers, instructors)
- technical and financial partners are particularly interested in becoming involved in the programme (World Bank, European Project, bilateral cooperation efforts, and so on).

The reaffirmation of political commitment within the framework of the forthcoming Burkina Faso National Education Support Project – backed by a committee of technical and financial partners – will serve to further the programme's expansion in line with an as yet undefined decentralised strategy. Meanwhile, the programme's role in giving qualitative and quantitative impetus to basic and continuing education needs to be acknowledged'.

Effectiveness

The programme helped build a genuine national resource (designers, instructors) with the potential for transferring the methodology to other audiences. Only a tiny minority of headteachers dropped out of the programme. It should be remembered, however, that those attending group sessions were paid a training allowance. Moreover, each phase was relatively short: five modules, representing 15 weeks of learning, and the courses were not legitimised by a final examination.

According to the various sources identified earlier (district inspectors, headteachers), the programme clearly had an effect on working practices. The inspectors' reports point out that the headteachers have become much more efficient in their jobs. There is a

great deal of expectation surrounding the programme's continuation: follow-up for headteachers who have already taken part and a fresh start for deputies who are seeking to procure the learning materials.

Evidence of the effectiveness of the management processes can be seen in the fact that implementation schedules and module dissemination targets were respected in the various districts concerned.

The principle of better schooling for girls was asserted, especially in the modules on parents' associations. These modules, however, have yet to be distributed to the programme audience.

Strengths and Weaknesses of the Programme

The main strength of this programme is that it constitutes what its protagonists regard as an effective and fitting response to a real need (as widely expressed by headteachers). Furthermore, its diverse range of themes was tailored to specific, local situations. The interviews, for instance, showed that one particular module was much appreciated for having contributed to the realisation of a school project (on the theme of the environment).

The programme's main weakness has been a lack of approval on the part of the education system. It was shelved in 2000-2001 because the Basic Education Support Project had reached its conclusion. The shortage of financial support and the fact that those involved in the programme (especially the designers) did not have enough time for a full commitment almost brought it to a halt in 1998. Also, the programme has remained somewhat limited in scope (having involved just 25 per cent of headteachers of schools with more than three classes).

Sustainability

The Headteacher Distance Learning Programme was divided into three phases:

- a pilot project phase in 1998 (70 learners)
- a first extension phase in 1998-1999 (920 learners)
- a further campaign in 1999-2000 (1,275 learners)

The programme did not continue in 2000-2001. This was mainly due to the fact that the Basic Education Support Project had come to a conclusion and the national education services had no funding plans of their own to support it.

A number of scenarios had nonetheless been developed for the year 2000-2001:

- renewing the programme in the same regions as in 1999-2000 (budget: around FFr 135,000);
- extending it to 1,800 headteachers in another six provinces, with training for 160 new instructors (budget: around FFr 300,000);
- extending the programme to 2,500 headteachers in another three regions, with training for 240 new instructors (budget: around FFr 375,000).

In the end, though, no further campaign was launched in 2000-2001. Just before the Basic Education Support Project was about to enter its final year, its remaining financial resources were diverted away from the Headteacher Distance Learning programme.

Given that the original budget would have sufficed to keep the programme going, its suspension was a result of the Project coordinators' strategic decision-making. The MEBA's Staff Training Service, for its part, had probably counted on the continuing support that the Project had pledged to the programme in June 2000. Then, in September 2000, the programme coordinator left to work for a European cooperation project. He was replaced by an inspector who was probably not very familiar with distance education for school principals.

These circumstances give a general idea of how difficult it can be for cooperation-based programmes to become sustainable, and the extent to which they remain too closely tied to the life span of the project that has initiated and supported them. The programme's suspension – albeit temporary, given that French Cooperation's forthcoming National Education Support Project includes plans to relaunch it – is indicative of the fact that the training was undoubtedly undervalued.

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13   Conclusions

These eleven case studies provide us with a significant body of data to further our understanding about the use of distance education for teacher education. Although the case studies were limited in their scope and took place in only ten countries, they make it possible to draw some conclusions about the appropriate uses of open and distance learning, its effectiveness and costs. The evidence also provides some guidance on key aspects for planners – on technologies, management and funding structures.

As we begin to assess this data, one general observation can be made about most of the studies. They are strong on description but weak on evaluative data, both quantitative and qualitative, on which to make judgements about effectiveness. The reasons are varied. However, the shortcomings in evaluation data are not only a feature of distance education provision: this can also be said of most teacher education provided through conventional pre-service teachers' colleges and in-service provision, including projects for curriculum reform.

In this particular research, the short time-scale of the case studies limited the possibility for much original empirical research. Most researchers had to draw from existing evaluative literature and data where it existed. More generally, there are also difficulties in researching a complex and interrelated range of factors related to effectiveness. The way that distance education disperses responsibility for a programme among a range of partners, sometimes on a large scale over distance – for student support, administration, tutoring, course production, delivery and assessment – presents logistical and methodological challenges for researchers.

Why are evaluation data so limited? A range of reasons emerges from the particular case studies. In some the generally restricted research capacity of a programme is due to lack of funding or time or an education tradition and structure which leaves the evaluation of programmes to another division or institution. In others it results from a lack of a research culture and skills in evaluation. In programmes with a wide geographical reach, data from the centre could not tell us how well it is working at more local levels. Often, the means for gathering data was problematic. One researcher commented, 'the main constraint for researching the programme is the lack of an organised database with information about it. Even though the staff was open and willing to help, they did not have an easy way of getting some information and in some cases their memory was the only source available. The teaching unit is now designing a database' (Chile case study).

It follows, then, that while the data from the case studies advances our understanding it can only be considered as partial. Nonetheless it points us towards those aspects where further research is needed as well as highlighting the practices needed for better management information and evaluation data.

What Is Being Used for?

The case studies show that, as discussed in Chapter 1, distance education is playing a role in four different but sometimes overlapping areas of teacher education: initial

professional education, continuing professional development, curriculum reform and change, and teachers' career development.

Initial Teacher Education

Three case studies in three very different countries play a role in initial teacher education – the China Television Teachers College, the National Teachers' Institute in Nigeria, the PGCE programme of the UK Open University. The programmes in China and Nigeria take in large numbers of entrants and make a substantial numerical contribution to increasing qualified teacher supply. In contrast the British Open University programme makes a contribution towards providing alternative opportunities for trainee teachers but in comparison to the Nigerian and Chinese cases, its numerical impact on UK teacher supply is small. The 1998 figures reveal an intake of 1933 trainee teachers (224 primary level, 1,709 secondary level) compared with a national annual intake of new teachers of some 30,000. However, there is some evidence from other research that twice as many teachers trained through the Open University's PGCE stay in the profession as the national average (up to 40 per cent of newly-trained teachers in England leave teaching within three years of qualifying). So while its numerical impact on supply may be small at the point of qualification (less than 7 per cent of all newly-qualified teachers), it may constitute a slightly larger proportion in the longer term in the light of teacher retention rates. This finding is also reported informally in some other countries though empirical evidence is lacking. There has been little study done of the employment patterns and careers of teachers, those trained by distance education and by conventional programmes. We need more information on returns over time to investment in teacher education.

The three programmes provide initial training for different levels of learners, for those with secondary-level entry qualifications in China and Nigeria to graduate entry in the United Kingdom. It shows that distance education can accommodate these differences. The programmes also handle the management of teaching practice in different ways, reflecting the regulations and norms of the different countries and the importance placed on it within different teacher education systems. While the whole programme from the UK Open University is designed around school experience, in the China programme it is minor and given little emphasis. In the UK programme, contact with students on teaching practice in schools and a reduction of their isolation – a problem area in all initial teacher-education programmes – is facilitated by the employment of ICT. The labour-intensive nature of the management of school practice in the UK, together with the use of ICT and a use of several media in combination is likely to increase the quality of teacher preparation but perhaps at a cost.

Continuing Professional Development

Continuing professional development is characterised by a diversification of provision, in terms of types of programmes, duration, management, technology and audience, and is an area in which distance education can play a significant role. Two of the cases (A-Plus in Brazil, and the Certificate in Guidance in India) illustrate the range and both include the broader community. The A-Plus television programme uses mass media on a large scale to reach a wide community of viewers while at the same time using the series as a launching pad for further activities by groups of teachers. This case illustrates how mass media like television or radio can provide a responsive means of meeting teachers' needs within relatively short timelines. They can be topical, 'of the moment'

in ways that are more difficult for print to achieve alone (in combination these two media have the potential to be greater than the sum of the two parts). The Certificate in Guidance has a less wide reach and provides a structured course which shows both the strengths and limitations of centrally-produced print materials: a high quality resource in the eyes of providers but not wholly appropriate from the perspective of users, less easy and slow to up-date by itself. It also illustrates a different approach, bringing the academic context of its location (a university) to bear and demanding a heavy workload from learners – perhaps too heavy to retain their participation. These two cases also have very different funding courses and costs.

Other cases in this set of eleven also have a professional development function too, so comparisons should not be restricted to these two. For example, some in-service programmes play an up-grading role in countries where individual teachers and government policies are trying to improve the standard of qualification. What emerges overall is the flexibility of open and distance learning in meeting different kinds of needs in a variety of ways, but also the need for planners to make appropriate choices, taking a number of factors into account (for example, nature and needs of audience, purposes of provision, function within overall provision for professional development, other options available to teachers, appropriate and affordable media, capacity of providers, the acceptable compromises and trade-offs of different choices).

Curriculum Reform and Change

Major problems in curriculum reform and change have been informing teachers, involving them in the change process and supporting them as they change their beliefs and practices. This is frequently neglected. Solutions have often resulted in slow information flows, inadequate or scarce support materials and slow, expensive cascades of increasingly diluted information with insufficient support for applying new approaches and practices in teaching. Three cases here show different approaches in the use of open and distance learning to support change.

The Universidad de La Frontera programme, supporting the teachers involved in the Enlaces project which introduced ICT to schools in Chile, provided an online programme for teachers, as an alternative option to face-to-face programmes and ensured that the course assignments were of an applied nature. Though the cost of the two alternatives (face-to-face and online) were about the same, the online programme appeared to achieve more change, in fostering more familiarity with ICT and the development of a 'network communication culture' missing from the face-to-face version. The OLSET programme in South Africa has been effective in reaching large numbers of teachers not only with prescription and advice on how to teach English as a second language but with well-designed lessons, provision of models, guidance in using the radio or audio-cassette resources and support for changes in teaching methods. There is some evidence that not only has the programme reached large numbers at low cost, but also been effective in helping young pupils to improve their English and teachers improve their teaching as well as their English. Using radio in a different kind of way, as a topical magazine which involves teachers in topic identification and programme construction, primary teachers in Mongolia became familiar with new ideas about child-centred teaching and other new approaches and were able to apply them to their teaching. The radio programmes were linked to print materials which served a different kind of function. This case showed that open and distance learning

could reach more teachers more often and more quickly by changing the way the in-service funds were used.

If continuing professional development is to have real meaning, it has to provide the opportunities and resources which translate into more than one week per teacher every ten years. So in terms of scale, variety of purpose and ability to support change, there are some indications that open and distance learning has considerable potential. Of course more research and evaluation are needed. The OLSET programme has benefited from several formative evaluations, using the findings to varying degrees. The Chile and Mongolia cases both rely on informal reports of positive impact on teaching and again point to the need for evaluation to be planned into project activities from the start.

Teachers' Career Development

One example of career development is given here though teachers may also further their careers through the professional development opportunities described in the other categories. In Burkina Faso, over a quarter of the country's headteachers (whose professional development is increasingly seen as a key element in school effectiveness) developed new knowledge and skills within four years. This served at least three functions: it furthered their careers, built capacity in the headteacher cohort and provided professional development. The upgrading programmes in other case studies also serve to further teachers' careers, especially where they are accredited.

How Effective is it?

What can we say about effects and effectiveness, completion rates and classroom effectiveness? Some programmes reached large numbers (millions) of teachers and educators, others comparatively small numbers (less than 100) though context plays a role in making these judgements. In the context of India, an annual enrolment of 1,000 for a course is small, in some other countries this would be large. In general, we can conclude that distance education can reach more teachers than conventional programmes and where mass media are involved, can reach very large numbers. The numbers reached by the one wholly online programme (in Chile) were relatively small and while this form has the capacity to expand, we have little information on the cost implications adding more tutors or staff for expanded numbers or of the comparative workloads involved.

Reaching teachers is one thing, generating teacher activity and application of ideas and knowledge to teaching and schools as an outcome is another. The case of Brazil showed how the reach of mass media could be partnered with support for local action to achieve the best of both worlds. In China, delivery appears as the main goal (again using mass media to reach large numbers) and the mobilisation of recipients less emphasised. This may reflect different cultural perspectives on the roles of learners and the balance between supply and demand in providing training and professional development. The reach of programmes cannot be considered in isolation from time-span. Some cases, such as Mongolia and Egypt, showed that distance education was able to reach more teachers more quickly than traditional alternatives. In Mongolia it reached over half of the country's primary teachers, and so had the potential to influence the rate of change of teachers' or headteachers' beliefs and practices within schools. This too could be seen in OLSET, South Africa, the programme reached over half a million pupils and their teachers within eight years and there is evidence of its positive impact. The programme in

Burkina Faso reached a quarter of the country's headteachers so affected a significant proportion of them. The Egyptian distance-education network made it possible to extend training not only to teachers throughout the country but also to other educators ― leaders (2,592), directors(4,743) and inspectors (23,947). There is another sense in which distance education has 'reach'. It was used to reach new constituencies of potential teachers who would otherwise not have entered teaching (the case of the UK Open University illustrates this) or received in-service development or support for teaching (as the cases of OLSET, Mongolia and Burkina Faso show).

We can say a little about completion rates but not much. The case-study researchers were not always able to obtain the information (at times it was not clear if the providing organisations themselves knew them or were simply reluctant to reveal them). Also, some provision was not in the form of formal courses but more like open learning where teachers participated as and when they chose. It was difficult too to get programme completion rates for the conventional system for comparison. For the formal distance-education programmes, completion rates varied widely. In Burkina Faso, very few headteachers dropped out, in Chile's ICT programme 51per cent failed to complete, mainly because of problems with fee payment. In the case of Nigeria, drop-out rates varied from 27-39 per cent and the pass rates of those completing the programme varied from 55 per cent to 64 per cent. These indicate some inefficiencies in the system or flaws in programme design since these drop-out rates are high in relation to the average rate for other distance-education programmes. In the Certificate in Guidance (India), the completion rate was about 15 per cent suggesting the need for major review. In the UK Open University case, completion rates appeared to be relatively high but no specific information on them was available to the researchers.

Overall, the main reasons identified for drop-out were fee problems, heavy and sometimes inappropriate workload, operational failures or weak management in the distance education system and, very importantly, weak learner support systems. For teachers, tangible rewards at the end of programmes play a role too. Generally, experience and research shows that drop-out from distance-education programmes tends to be higher than for traditional alternatives (though recent studies of part-time conventional programmes at higher-education level indicates that the gap is much less than previously thought and in some cases, is comparable).

In some of the cases (China, Nigeria, South Africa (OLSET)) distance education for teachers is a significant part of the system and a part of national strategic planning for teacher supply and upgrading quality. In others, it has provided an alternative (Chile, United Kingdom) or supplement (Brazil, India). In some countries it has filled a gap that would otherwise have continued unfilled (Mongolia, Burkina Faso) and has introduced innovatory approaches, more appreciated by governments in some countries (Mongolia) than others (Burkina Faso) as a possible productive strategy to support. In general, policy makers need to consider more often the option of distance education as a way of providing initial and continuing professional development but to do this well they need more information on its potential outcomes, strengths, limitations, constraints, media choices, costs and operational and policy requirements. While some of this information is available, much is still not because of weaknesses in the research and evaluation base and inadequate dissemination of existing information. Mistakes get repeated or opportunities missed because planners are not always well-informed.

One focus of concern in all teacher-education programmes, whether distance-education or conventional, is to turn what teachers know and believe into what teachers do to support children's learning. Weaknesses in achieving this apply to conventional programmes as well as to distance education ones. Many conventional programmes fail to attend to this and some produce qualified teachers who have had only a token or minimal of supervised school experience. In some countries, practical teaching forms no part of the final assessment of teachers. The issues for a distance-education provider are how to manage the supervision and assessment of students in distant locations and how to design materials and activities in ways which integrate knowledge or theory with practice. In these cases we have examples of different strategies: a support structure for local action-groups of teachers (Brazil), delegation of supervision and assessment to school staff, with varying degrees of prescription and support (Nigeria, UK, UNISA South Africa), the provision of teaching content, models and sequenced structure in the lessons provided for children (OLSET South Africa), the design of course-work to require a practical application (Chile and UK), the exchange of practical experience in workshops and newsletters (Mongolia and Brazil) or through websites (Chile and UK), the demonstration of model lessons through television or video (China and Egypt), the use of applied projects rather than examinations on theory and the inclusion of the assessment of performance in the final grade on formal programmes (Nigeria, UK). Some of the eleven cases make the practice of teaching the central focus of programme design and organisation, others assign it a relatively minor, or even marginal place, not because of the logistical difficulties involved for a distance education provider but because of the traditions and perceptions of teacher education in the different countries, and its role in conventional teacher-education programmes.

In general, the strategies to integrate theory with practice in these case studies fall into the three categories identified by Robinson (1997):

- *knowledge about practice* (a teacher is able explain what multi-grade teaching is and produce an essay or examination answer on it);
- *knowledge applied to practice* (a teacher can plan the organisation of multi-grade teaching or materials for it and show how these might be used in the situation or report and reflect on work done);
- *demonstration of knowledge and understanding through performance* (a teacher shows the use of multi-grade teaching through the conduct of teaching and learning activities, observed by others).

The different categories have different logistical and cost implications for distance education. One danger here is that activities in the first category are (wrongly) assumed by programme providers to result in the outcomes found in the third (competence in performance) as a matter of course. They do not. However, for most of our eleven cases, we lack sufficient evidence of the extent to which knowledge gained translated into knowledge applied in fostering children's learning. This lack of evidence is to be found in traditional teacher education too but is an aspect of research and evaluation much needed in distance-education programmes, to aid designers and policy makers.

What Does it Cost?

The case studies confirm the existing finding that distance education can be at an economic advantage over conventional provision but it is not always so. The reasons for this are to do with scale, choice of media and technology and programme design.

Some lower costs are reported. Initial teacher education in Nigeria by distance education has lower costs than conventional programmes. The UK Open University claims costs to the exchequer are lower than conventional programmes though some of the cost-savings come from the absence of subsistence grants to distance mode students. The ICT online programme in Chile cost about the same as its face-to-face equivalent though the cost structure was used differently. The true costs of it were difficult to establish (since some costs were absorbed by the parent institution) and cost-recovery was not possible because the system for collecting students' fees was ineffective.

Some distance-education programmes have no traditionally delivered equivalents for comparison, especially in continuing professional-development programmes. What is possible in some cases is to compare differences between similar programmes within the same institution. For example, because of low numbers, the Certificate in Guidance (India) programme had higher student-support costs (tutoring and study-centre facilities) than other larger-population programmes within the same institution. Attendance at study centres was low so the services were underused so it can be argued that the most costly component yielded the least benefit to learners.

As with other programmes using television, the A-Plus programme typically had high development and production costs and low per user costs (less than US$ 0.10 per viewer per television programme). The annual costs of supporting a teacher in its Community Mobilisation Network was US$ 18 per teacher, and US$ 84 per school or institution. Similarly the development and transmission costs of interactive radio provision in South Africa's OLSET programme were low: US$ 1 per pupil per year and slightly more for teacher support. A similar picture emerges for Mongolia. The costs of radio are affected by the salary costs of producers and technicians in different countries and the regulatory framework affecting broadcasting. The cost of preparing, transmitting and repeating a 20-minute national radio programme in Mongolia was US$ 110 but the cost of electricity for transmission was high and access to airtime for local radio stations was heavily regulated, limiting the use of local radio. In all of these cases, the delivery of television or radio programmes is not the end point but the beginning of other activities by teachers, with the programme providers giving the support.

The use of distance education in at least one case allowed limited funds to be used in different and more effective ways. Whereas traditionally in Mongolia, 85 per cent of in-service funding for continuing professional development had been used for travel and subsistence, the use of distance education enabled a higher proportion of the budget to be used on the training element, that is, the creation of learning resources for teachers and more local workshops. This altered the amount of access teachers had to learning opportunities. Instead of one week's professional development per primary teacher once every ten years distance education enabled regular ongoing input through radio, printed materials and group meetings for over half of the country's teachers in six years. Given the range of professional development needs facing policy-makers and planners, new uses of available funds need to be explored if needs are to be met. Not all countries are

in the position of Brazil where many opportunities and channels of provision for continuing professional development exist and at little or no cost to the teachers.

We are limited in the conclusions we can draw about costs. The data available in the case studies were often limited and partial for several reasons: cost data were not kept or known to the programme provider; information about costs was confidential or too sensitive to reveal or make public; costs were not recorded in ways which allowed the researchers to analyse the costs of the distance education programme; the complexity of the cost identification and analysis for some programmes was beyond the scope and time available for this study. In pointing to the limited information on costs here, we also need to remember the similarly limited information on conventional teacher-education programmes in many countries – one reason why the case researchers were not always able to draw comparisons. We also need to remember that the cheapest medium may or may not be the most appropriate one, so factors other than costs enter into media choices. One outcome of this exercise was that in several cases, programme providers said that they were surprised at what they did not know about the costs of their own programmes and saw the need to improve their recording and analysis of costs. If they did, it might influence some of the choices made.

What Media and Technologies Is it Using?

Printed materials continue to be a mainstay of distance learning provision, even for programmes like the UK Open University's PGCE which has a major ICT element. Print plays a variety of roles, either as lead or supporting medium, and is valued for its durability, convenience, low cost, familiarity and suitability for combining with a variety of other media. Where print is the only medium available, especially for programmes focusing on teaching methodology, it has its limitations and can lack the immediacy of video or audio and the production process is slow than ICT delivery allows. Despite its familiarity, there is also scope for improvement in the design of self-study materials and existing textbooks are not always an adequate substitute though they have some role to play. In these eleven cases, printed materials was used to varying extents in nearly all of the programmes in some way, the exception being the Chile case, where text materials were delivered on-line.

In two of these cases (OLSET South Africa and Mongolia) radio (with back-up audio-cassette use) has played a major role. It has provided an accessible, appropriate and low-cost technology, using a familiar medium in new ways to stimulate further activities. It can partner print effectively. In two cases (China and Brazil) television has been the main medium though used in very different ways. In China is was to deliver more formal talks or discussions or to show recordings, often made in studios, of classroom lessons taught by 'master teachers'. In Brazil it provided examples of applications in field settings with expert comment designed to challenge assumptions or stimulate argument as well as providing a core item around which other activities develop. In both cases, the countries have a strong infrastructure for television with educational channels available. In Egypt, where neither was available, interactive videoconferencing was employed and broadcast via satellite and received in centres in each governorates throughout the country by fibre optics and (fixed or mobile) satellite systems. In many countries there is little enabling policy which facilitates the use of mass media for distance education and in some, the move to a market economy has eroded previous access.

Most cases relied on one or two main media plus face-face-meetings; in some cases other media played a small role. Few combined several in an integrated way (the UK Open University case was unusual in doing this). No single medium can effectively provide (in a stimulating and illustrative way) the kinds of things teachers need to learn or see, especially where learning about teaching approaches and processes. Though there are great expectations of the role that ICT will play in teacher education and though it opens up new possibilities, other media are capable of providing good quality teacher-education programmes if well designed, appropriate, accessible and affordable. The use of ICT will grow gradually alongside other media use as infrastructure, costs and access make it more possible and is already playing a supplementary role in programmes. Because of the huge current interest in the use of ICT, we will explore its use in teacher education in the next section.

The Use of ICT for Teacher Education

ICT in teacher education refers to two sets of activities or roles. One is training teachers to learn about ICT and its use in teaching as computers are introduced to schools. In many countries this is being done through face-to-face training programmes, often as part of initial teacher education. Some countries (such as the United Kingdom and Singapore) have developed policies which require all initial teacher-education programmes to include compulsory courses in ICT as a strategy for building capacity in ICT. In other countries, no policy yet exists and teaching teachers about ICT is at best an option within teacher-education programmes. In some cases, the facilities and equipment for supporting a strong policy are inadequate.

The other role of ICT is as a means of providing teacher education, either as a core or main component of a programme or playing a supplementary role within it. The case of Chile illustrates both kinds of activities within one professional-development programme: teachers on the programme learn to use ICT and to use it in teaching their different subjects by means of a wholly on-line programme which has, as its core element, on-line delivery and activities. In the case of UK Open University's initial teacher-education programme, the materials are not delivered online but online communication plays a key role in supporting student-teachers during school-based training, providing interaction with tutors and other students and feedback to programme providers.

Research and experience so far show that where ICT is offered as an optional supplement in programmes, it is less likely to be used by student-teachers than when it is a required activity for a purpose. As the Chile case showed, teachers who took the online version of the programme developed more use of the virtual working environment than those on the face-to-face programme and developed a 'network communication culture'. So the outcomes of training programmes for teachers on the use of ICT appear to be affected by how the programmes are delivered. A common problem in programmes where ICT is a supplementary component is in getting students and tutors to use it.

In looking for established cases of ICT use for teacher education when planning this study, we found fewer than we expected. While many new initiatives have begun, there are few completed programmes with experience to report. There are many examples to be found of ICT forming part of a conventional programme of initial teacher education and whether this is a compulsory or optional part depends on government policy in a country.

Sometimes this is taught as an on-campus subject or in some cases (as in Australia) it can be taken in an alternative distance learning mode. There were far fewer examples to be found of ICT as a core means of delivering or supporting initial teacher-education programmes (not just ICT courses), especially in developing countries. There were more examples of online use for continuing professional-development programmes at diploma and higher degree level and for short courses. A great deal of activity is to be found at present in the use of ICT in providing informal professional development for teachers through online activities ('chat rooms', specialist subject conferences, virtual classrooms, networks, professional development websites, peer group discussions, bulletin boards, resource sharing). This gives teachers access to people and resources as well as putting more choices for professional development (formal and informal) into teachers' hands.

Out of experience so far some issues and lessons emerge for planners:

- Building teachers' capacity in ICT and using ICT as a means of teacher education and professional development cannot happen in isolation from its use elsewhere in the education system and wider environment.

- National policies, strategies and plans need to be integrated into the teacher education curriculum for initial teacher education and in priorities and funding allocation for continuing professional development.

- Teacher education cannot develop the use of ICT without the infrastructure and funding to support it and major investment and strong government policy is needed for this as the experience of some countries has shown (for example, Chile, the United Kingdom and, beyond the case-studies, Singapore).

- Experience shows too that teacher educators are a key element in establishing the use of ICT in education and teacher education but many teacher educators themselves lack skills and training in the use of ICT or the equipment to apply and develop their knowledge and skills, once gained.

The very limited evidence available on costs so far shows that, assuming an existing infrastructure, the development and teaching of online programmes may cost as much or more than face-to-face equivalents, though the cost structure will be different from that of face-to-face teaching or other kinds of distance education. Since students will often need to bear some of the costs this which may affect their access. The advantages of ICT lie in its potential for increased interaction with and between learners, speedier delivery and response times to queries and feedback on assignments, greater access to communities of teachers and quicker lead-in times for updating course materials while at the same time needing the establishment of effective quality assurance procedures. The use of ICT and CD-ROMs, is becoming more common for materials developers of distance-education programmes of all kinds and for supporting administrative processes and staff involved in tutoring or learner-support.

How Is it Managed?

Distance-education programmes are provided through a variety of organisational arrangements. Some are located in universities or institutions, some are provided through consortia or collaborations, and others are time-limited projects, often donor-funded. The categories of providers in this set of case studies are given in table 13.1. Five of the programmes are made available through universities (four distance teaching universities

and one traditional one). One programme is provided by a distance-teaching teachers' college (an unusual form of institution). Three are donor-funded projects and one more is a programme provided by a consortium of private agencies, managed by the philanthropic division of a commercial, national communications network and privately funded.

Table 13.1: Types of Providers

Category	Case
Universities	
Distance-teaching university	UNISA, South Africa
	Open University, UK
	China TV Teachers College
	Indira Gandhi National Open University, India
	Universidad de La Frontera, Chile
Traditional university providing an online distance education programme	
Distance teachers' college	National Teachers' Institute, Nigeria
Donor-funded projects	Open Learning Systems Education Trust, South Africa, with its own project structure and staff
	UNICEF in partnership with the Ministry of Science, Technology, Education and Training, and the School of Educational Development (a national institute)
	RESAFAD (the African Network for Education at a Distance), Burkina Faso. A collaboration between several countries in West Africa and a development agency in France
Consortium of private and public agencies.	TV-Futura, Brazil

Some of the differences between the types of providers spring from different views about the role and functions of the state in educational provision. Brazil, for example, has a strong pluralist tradition which leaves space for the private sector to play a significant role in education. South Africa's ambitious reconstructionist aims can only be adequately met by a range of both governmental and non-governmental agencies. But there are strengths and limitations to operating outside the state educational system. The outsider status of TV-Futura and OLSET has given them independence from some political and pedagogical constraints that often accompany formal programmes. This 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 support that is often unavailable through state activity. The private ownership of TV-Futura has also brought the benefits of high production standards. OLSET and TV-Futura have, with varying degrees of success, had to set up their own structures in curriculum development and materials production and in developing their outreach infrastructures. TV-Futura has had the benefit of high levels of private funding to develop an impressive outreach network. In contrast, the detached

status of OLSET has led to a constant struggle for funding, particularly state funding, and for air-time on the national radio broadcasting station. This has often compromised the quality and consistency of its provision.

Donor-funded projects are frequently used as a vehicle for teacher education but have their strengths and limitations too. While they have more scope to innovate, bypassing the inertia of the traditional system, they are also more vulnerable, frequently dependent on external funding. Their sustainability depends on whether the project, usually a time-limited initiative, becomes institutionalised. The history of distance education for teachers, especially in developing countries, is littered with the bones of short-term projects which have served their purpose and been discarded (until the next crisis in teacher education).

The established distance-teaching universities here have provided teacher-education programmes alongside others. Through their regional infrastructures, they have increased access to programmes and professional development opportunities for teachers. They have administrative and logistical systems which can accommodate a range of different programmes and, because systems are in place and shared, can sometimes afford to run programmes that are not strictly cost-effective but are seen to have social worth (for example, the Certificate in Guidance programme). However, there are some challenges too: the provision of local support which is accessible, the monitoring and management of student support at the local level, the responsiveness of central providers to local differences or languages, the organisation and assessment of teachers' practical work, and the provision of timely feedback on student coursework. Distance-teaching universities may also have inflexible requirements as a way of ensuring standards. As a result, they may have inappropriate requirements for some nonformal programmes (as may be the case with the Certificate in Guidance or other similar programmes which do not fit neatly into an accreditation system). In addition, teacher-education programmes often involve partnerships: with schools, local education officers, teachers' colleges, school inspectors, headteachers and district authorities. In the case of initial teacher education, the management of courses and student progress is shared with partners such as these, to varying degrees and especially in the management of practical teaching. In some cases responsibility is delegated altogether for the management of students' teaching practice (as in China). In others it is a specified and contractual partnership between the school and the distance-education provider (as in the UK Open University). Most other arrangements fall somewhere between these two but in all cases, they present challenges and have costs for a distance education provider.

How Is it Funded?

The case studies show that distance education for teachers receives funds from all four of the most usual sources of funds for education: from government budgets, from student fees, from the private and NGO sector and from funding agencies. Several programmes receive funding from a combination of sources so that, for example, the programmes in both China and Nigeria are funded partly by government, partly by student fees. Funding source is mapped onto the eleven cases in figure 13.1.

In general, governments have proved willing to fund not only initial teacher education but some programmes of continuing professional development, especially for curriculum reform or for some upgrading programmes in countries trying to raise the minimum standard of teacher qualification. Students are often expected to pay fees where they enrol

on a course which will benefit them in terms of career advancement or salary increment. The NGO sector is involved in the projects in Brazil and at OLSET in South Africa but there are significant differences between the two. The provision in Brazil is through funds generated within the country by an established consortium, while OLSET is dependent on external, donor funding and despite its successes, seems unable to attract government funding. Like other long-term projects, questions about sustainability inevitably arise in relation to the future of the OLSET project and others like those in Mongolia where the support to in-service teacher education was intended as a temporary measure until the economic situation improved.

A number of policy issues emerge from the cases: how to find the appropriate balance between government funding and student fees for some kinds of teacher-education programmes; the role distance education should play in both initial training and continuing professional and in relation to conventional provision; how to maximise returns to training ▪investment; where to locate responsibility for distance education within the education system; how to build a better information and evaluation basis for decision-making. In relation to policy formation, it can be said that distance education is not often enough considered as a strategic option when planning the provision of teacher education.

Figure 13.1: Funding Source

Programme	*Source of funding*			
	Government	*Student fees*	*Private, local, NGO sector*	*Donors and funding agencies*
Brazil (television-led continuing education on many topics, non-formal: 'journalism in the service of teacher education')			▪	
Burkina Faso (structured programme of headteacher training)				▪
Chile (structured programme for ICT training)		▪		
China (structured programmes, mostly academic subjects, leading to qualification for teaching)	▪	▪		
India (structured programme for teachers and others on child guidance)	▪	▪		
Mongolia (resource-based, non-formal provision of materials on child-centred teaching methods)	▪			▪
Nigeria (structured programme of studies leading to teaching qualification)	▪	▪		
South Africa: OLSET (radio-based programme for improving English learning and teaching methods)	▪		▪	▪
South Africa: UNISA (structured programme leading to teaching qualifications)		▪		
United Kingdom (structured school-based programme of initial teacher training, leading to qualification)	▪			

What Do we Still Need to Find out?

The eleven case studies have provided a valuable resource which adds to our knowledge and understanding about the use of distance education for teacher education, initial and continuing. As well as illustrating a range of different purposes, approaches and technologies, they have helped to highlight what we do not know and still need to find out.

We need to learn more about the costs of teacher education, whether conventional or distance education. Although the data on costs is slowly accumulating, this continues to be a neglected area. Some of the data are not available to the providers of distance-education programmes either because they have not recorded it at all or because the records do not permit analysis. Some costs are known but confidential since they are a sensitive topic, and some providers are unwilling to reveal them. Some costs are not known because providers, though willing, are not sure how to record and analyse them for distance-education programmes. However, without knowing costs, it is impossible to tell how cost-effective programmes are and assumptions about cost-savings in distance education continue without evidence either to support or disprove them. This provides a shaky base for policy-makers.

We need to find out more about efficiency rates (enrolment, completion and success rates). It was sometimes surprisingly difficult to get data on these basic aspects. In some cases, the data exist but not in a way that is easily accessible in records. In others, the data do not exist or are not available even to members of the organisation who need to know about their own programmes. In traditional institutions, the adoption of distance-education programmes can generate new demands on existing record systems and create the need for improved ones, as the case of Chile highlighted. However, some continuing professional-development programmes do not have a sequenced course with assessment at the end and are more like open learning. In these circumstances, appropriate measures need to be developed to find out what the participation rates are and what they signify and what kinds of record keeping would be both manageable and informative.

We need to know more about effectiveness and the impact of programmes on teaching and learning. For some distance-education providers, their task ends at the point of delivery. For others, like Brazil's A-Plus programme, delivery is the starting point for further activities. So we need to learn more about different kinds of outcomes and the kinds of linkages between programmes and outcomes and the translation of things learned by teachers into improved teaching, and ultimately, improvements in children's learning. We also need to know more about the benefits and drawbacks of different options and outcomes in deploying resources and focussing effort in teacher education, not just within initial teacher education or continuing professional development, but in the balance between them. We need to keep monitoring and evaluating applications of ICT in teacher education in order to build a realistic picture of its strengths, limitations and costs and to identify effective strategies for introducing it.

We need to find out more about the policy environment of distance education for teacher education, both within teacher education and in relation to the wider environment of regulatory telecommunications or media policies. Some countries, in their policies and plans, have distance education as an explicit strategy for training teachers. Others have no mention of it and continue to think within the box of traditional models and customary allocation of resources while unable to meet pressing needs. Some of the traditional models no longer fit

new needs. So we need to learn more about effective and enabling policies for the provision of teacher education using distance education.

Finally, we need to find out more about the evaluation of teacher education through distance education: the methods and approaches that would be most useful as well as manageable, the kinds of practices that already take place, the tools that would be useful and ways of evaluating programmes to take as much account of teachers' voices in remote village schools as of specialist curriculum developers in capital cities.

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