

Costing Open and Distance Teacher Education

Case Study Examples from Sub-Saharan Africa

Frank Banks, Mike Bird, Michèle Deane,
Claire Hedges, Jenny Leach, and Bob Moon

World Bank Institute

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Costing Open and Distance Teacher Education: Case Study Examples from Sub-Saharan Africa

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Executive Summary

Section 1: Introduction

As Sub-Saharan Africa faces the challenges of providing teacher education for the 139 million primary school children predicted by 2015, it is clear that the scale required of pre-service training, upgrading and continuing professional development for teachers is huge, and can only feasibly be met by employing techniques offered by open and distance learning (ODL). This paper complements *Designing Open and Distance Learning for Teacher Education in Sub-Saharan Africa: A Toolkit for Educators and Planners* (Moon, Leach & Stevens, 2006) and considers the costs associated with different forms and models of ODL, which, in the way that the programs respond to their context, offer lessons for policy makers and other institutions.

This understanding of costing principles and frameworks in relation to ODL is particularly relevant today as former costing models become redundant in light of information and communications technology (ICT) and e-learning developments, and new models are required.

In selecting the five institutions, care was taken to reflect the range of different types of ODL approaches to teacher education available in Sub-Saharan Africa, across Southern, East and West Africa and including a Francophone country. The cases span single- and dual-mode institutions and all, to varying degrees, have initial or upgrading teacher training programs that include formal assessment systems and local support systems.

Section 2: Why Open and Distance Education?

Many of the advantages of using distance education are well known, and Africa has a long history in using ODL in education. The rise in the availability and use of ICTs has made it even more possible to share and collaborate with other institutions and open content initiatives such as TESSA (Teacher Education in Sub-Saharan Africa) have been set up to facilitate that process. Less obvious benefits of ODL, however, include the benefits of learning in context when the classroom itself becomes the site of learning. ODL materials that use the classroom and school environment, and linked assessment strategies that require a teacher to learn new classroom techniques and carry out activities within the everyday classroom setting, are an extremely powerful means to effect pedagogic change. Research in both England and the USA found that many teachers believed that job-embedded, collaborative professional development activities are better for a teacher's professional development than more traditional forms of development strategies. Additional benefits of ODL for teachers as busy professionals, often with additional community and family responsibilities, are the aspects of self-pacing and self-motivation which the flexibility of ODL offers.

Section 3: Cost and Cost-Effectiveness

There are few cost studies available and analyses of costs as detailed as those presented by the five institutions in this paper are rare. In considering cases, it is important to realize that, in setting up ODL programs, the proportion of fixed to variable costs is higher than in conventional teacher education courses. Initial costs of ODL systems are often very high, but as the numbers of students rise, the costs do not rise as steeply as in conventional teaching, and so the average

cost per student can be much less. In addition, on ODL programs, teachers are able to carry on teaching in their schools and so ODL teacher education can be very cost-effective.

Section 4: Diploma in Basic Education at the University of Education, Winneba (UEW), Ghana

Since its inception, 5,400 trainee teachers have enrolled on this three-year upgrading program, which uses a blend of print study texts and tutorials with residential schools. There are plans to expand rapidly from current enrolment of 1,800 students a year to a projected 65,000 over its first ten years. This is a clear example where the program team and functions costs can be spread over a large number of students, giving, at a projected \$300, the lowest cost per student of all the cases studied. Achieving the planned expansion in numbers offers a significant challenge to this program. There is potentially an even greater challenge in setting up the necessary staffing and support infrastructures, such as student tracking systems. This ODL model has relatively high assessment costs (nearly treble those of student support). The capacity and costs linked to the need to find staff to mark assignments under the current assessment model is a potential obstacle to expansion.

Section 5: Nigerian Certificate in Education at the National Teachers' Institute (NTI), Kaduna, Nigeria

This program has a more even spread of costs across learning resources, student support, assessment and quality assurance, and program maintenance and administration. Using printed texts combined with face-to-face tutorials and teaching practice, this certificate is assessed through assignments, tests and examinations. It is a very large program of 24,000 trainees annually (2004 year numbers) and a projected total of 381,000 over the program life. At a cost of \$500 per trainee, the benefit of large student numbers to set against the fixed costs is clear. In this program, 50% more is spent on trainee support than on assessment.

Section 6: Teacher training program for unqualified teachers at the Université Cheikh Anta Diop (UCAD) Dakar, Sénégal

At the UCAD, 800 unqualified teachers are enrolled annually for a one- or two-year program to train to teach at lower secondary level. Typically, a teacher has a baccalaureate and some teaching experience and will be appointed by the Ministry for Education as an unqualified teacher. Analysis of the costs of this program shows costs concentrated within program management, and consideration is being given to the composition of the team to maximize the use of skills and resources. Resources and costs are also focused on student support (at approximately 35%), as the program has a large face-to-face element in tutorials, residential schools and teaching practice.

Section 7: Primary BEd Distance Education Program at the University of Fort Hare (UFH), Eastern Cape, South Africa

Using a highly developed support network, UFH enrolls 400 teachers annually and, over five years, has graduated 1,500 teachers. Program management costs to operate the central and regional centre network are the highest studied in the project, and the proportion of variable costs within learning resources, trainee support and assessment are relatively low. This high level of

fixed costs spread over the trainee base leads to a relatively high unit cost per trainee. In this program, tasks are very much school-based. Through face-to-face tutorials, assignments, portfolios and 'affirmation', the percentage of teachers completing the program is high.

Section 8: BSc with Education at the Open University of Tanzania (OUT), Dar-es-Salaam, Tanzania

The OUT program is a relatively small program with 100 in-service teachers recruited annually and the smallest studied. It also has the longest program, with teachers taking between six to eight years to complete. By November 2004, 26 teachers had completed their studies and graduated. With these low numbers, the cost per student of program resource management is relatively high, as it is not possible to spread the fixed costs so easily. The program is composed of a large number of small units of study, each of which is assessed carefully and consequently assessment costs are treble those of trainee support. However, the intended life of this program is long and eventually 1,600 trainee teachers are projected to be enrolled.

Section 9: Some Key Policy Lessons

In considering the different programs, it has been found necessary to return time and again to the balance between effectiveness and efficiency and the competing demands of quality, access and cost. The following key policy issues emerged:

- A program can be more cost-effective and easier to administer by integrating the content of traditionally short courses into larger courses.
- The length of training also impacts significantly on costs. An assumption that one year of full-time education must equate to two years part-time should be contested, and accreditation of prior learning – especially for unqualified or under-qualified working teachers – should be the norm.
- The smaller the courses, the greater the overall assessment costs are likely to be and how assessment is staffed can become constraints to program expansion and effectiveness.
- The costs associated with upskilling in the use of new technologies manifest themselves in a number of ways. There is the straightforward cost associated with the introduction of new technology, but a more hidden cost is the expensive use of academic staff to re-key and amend ODL learning resources. The potential of ICTs to increase access to and quality of ODL will only be effectively harnessed where appropriate costing models are considered and used at the start of planning their introduction and implementation.
- To give an accurate cost-benefit analysis of ODL methods for training teachers, it is necessary to be clear who is enrolled on a program, who is taking a study break, who has withdrawn and who has graduated. Keeping track of students' progress, tutor-marked assignments and associated school placements requires a sophisticated database.

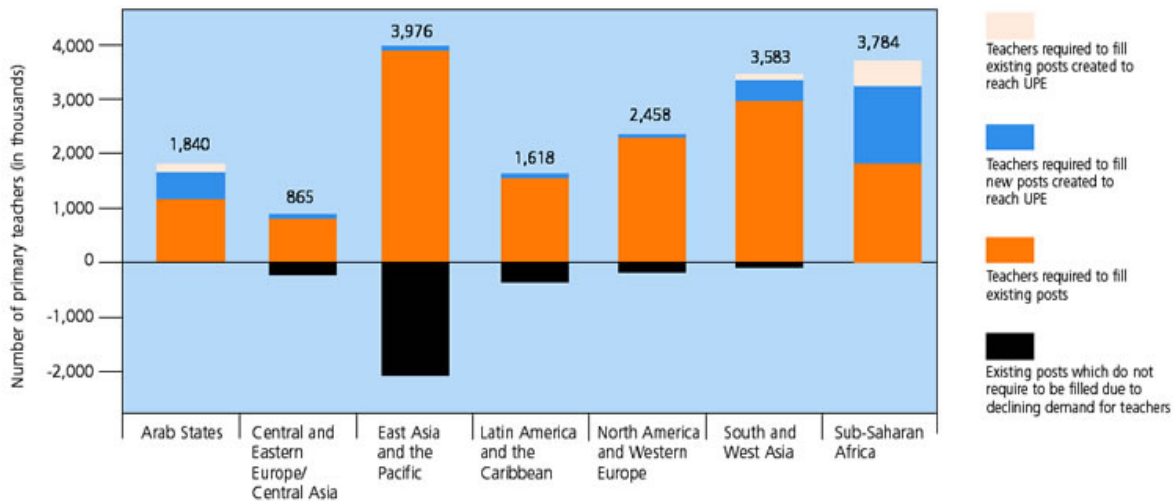
- Great diversity of trainee support models can be seen. The link between trainee achievement and the cost-effective use of resources, and the balance of fixed to variable costs within the proposed trainee support model, need careful exploration at the planning stage.
- Excessive staff workloads in the development and presentation phases raise serious sustainability and growth issues in the longer term. Addressing these issues at the start of planning the program may well result in significant changes in program design that can benefit both students and institutions.

1. Introduction

Context

These cost studies form part of an ongoing effort by the Africa Region Human Development Department of the World Bank and the World Bank Institute to synthesize and share knowledge on how distance education and ICTs can support education in Africa, particularly the education of teachers. The studies complement a preceding World Bank publication, *Designing Open and Distance Learning for Teacher Education in Sub-Saharan Africa: A Toolkit for Educators and Planners* (Moon, Leach & Stevens 2006), which focuses on key issues in the planning and development of teacher education at a distance in Africa, in light of recent worldwide experience and best practices in the field.

The drive towards the Millennium Development Goals (MDG) of Universal Primary Education (UPE) and Education for All (EFA) by 2015 has brought to the fore, the significant challenges facing teacher education in sub-Saharan Africa. According to UNESCO's latest estimates, at least 4 million new teachers have to be recruited over the period of the decade leading up to 2015. Millions more unqualified and under-qualified teachers in service have to be upgraded to meet the targets of quality education for all.¹ In several countries less than 40% of the teachers are accredited according to their national standards. In addition, there are wide disparities in the rural and urban distribution of teachers, shortages of teachers in the areas of maths, science and technology and language and gender imbalances. The situation is further complicated by the devastating effect of HIV/AIDS on the teaching profession.



¹ UNESCO's Teacher Training Initiative in Sub-Saharan Africa (UNESCO 2005)

A new challenge is that of the growing use of contract teachers, particularly in francophone countries, as a strategy to respond to acute teacher shortages and to reduce the wage bill for teachers. This category of teachers typically comprises a broad and varied category (volunteers, community teachers and para-teachers) mostly without pre-service preparation, thus raising additional demands for in-service training.

Africa's teacher education systems are increasingly unable to cope with these unprecedented demands for the training of teachers. The requirements for new teachers are far beyond the capacity of traditional teacher's colleges. Moreover, the pre-service education of primary school teachers in most sub-Saharan African countries has been criticized as being overly academic and theoretical in nature, ineffective and costly. A number of cost analyses of pre-service programs in Africa have shown them costing about nine to ten times more than programs of secondary education (Perraton 1993). In-service training opportunities are relatively limited and irregular, while continuous professional development in many countries has been characterized as one-size-fits all, one-shot, top-down models. (ADEA 2005: 187)

ADEA (2005: 178) sums up the critical challenge facing teacher education today in Africa: reconciling the need to deploy large numbers of competent teachers with the imperative of financial sustainability is the dilemma to be managed. Teaching and by extension teachers constitute a strong determinant of student achievement; but at the same time, teachers' salaries constitute the single most important item in educational expenditures, reaching two-thirds or more of education budgets in most countries. The question therefore is: **How best to prepare teachers for teaching and provide for their further development in service, in a financially sustainable way?**

The deepening crisis has led to increased calls for radical reform of teacher education. The EFA Monitoring report (2005:3) stresses that to achieve the goals of quality education for all by 2015, training models for teachers should be reconsidered to strengthen the school-based pre- and in-service training rather than rely on lengthy traditional, institutional pre-service training. Similarly, ADEA's recent report on education quality in Africa urges countries to reevaluate pre-service and in-service training:

Teacher training can no longer be perceived as an extension of secondary education, only loosely connected to rural classroom conditions and practice. In-service training cannot continue to be an event that teachers participate in for a few days every 5-10 years" (ADEA 2005:39).

It is in this context that African policy makers and educational planners have been paying renewed attention to the potential of distance education as key strategy in addressing the daunting teacher education challenges confronting the region. At their meetings in 2002 and 2004, the African Ministers of Education² urged governments to "*include open and distance learning in all national plans and policies, especially in the areas of teacher training....*"

² The Conferences of the Ministers of Education of African Member States (MINEDAF), Tanzania 2002; All-Africa Ministers' Conference on Open Learning and Distance Education Cape town, South Africa 2004.²

Teacher Education at a Distance

Perraton (2000:1) summarizes nearly four decades of world experience of distance education for teachers:

Distance education has been used to provide initial training for inexperienced teachers, initially training for experienced but unqualified teachers, and continuing education for qualified teachers. Programmes have included some or all of four elements of teacher education: general education, learning about the subjects trainees will teach in the classroom, pedagogy and associated subjects, and classroom practice. Programmes have generally been successful in their aims of reaching large and scattered audiences, and have often achieved highly successful completion rates and examination pass rates, especially where trainees were guaranteed promotion on completion. There is also evidence of learning gain and of the development of teaching skills by trainees. Programmes have tended to have lower unit costs than conventional teachers' courses because of the saving in residential costs and the economies of scale that can be achieved through distance education. Costs per successful student have often been between one half and two-third of the cost of conventional teacher education.

Africa has a long and relatively successful history of teacher education at a distance, particularly for primary teachers (Murphy et al. 2002:32). The figures are impressive. In Uganda, about 10,000 teachers have received in-service upgrading and training through the distance education component of the Teacher Development and Management System (TDMS), established in 1994. Zimbabwe's Integrated Teacher Education distance teacher education system (ZINTEC) trained over 7,000 teachers in four years; and, in Tanzania over 45,000 teachers received qualifications in eight years through emergency distance education programs.

In Nigeria, the National Teachers' Institute (NTI), a dedicated institution for teacher education at a distance included in this study, has graduated over 80,000 teachers in the country's National Certificate of Education (NCE). Over 1,397,278 teachers are reported to have benefited from its Teachers' Grade II certificate program since its establishment 1976. An in-service training program for head teachers in Burkina Faso using a mix of internet and print-based delivery reached one quarter of head teachers in the country.

The advantages in terms of speed, reach and flexibility make distance teacher education programs an attractive and compelling solution given the urgency, the daunting scale of requirements and the acute resource constraints that currently obtain in Africa. A number of studies have borne out the cost-effectiveness of ODL relative to conventional education in the African context. Perraton and Potashnik's (1997) review of 14 projects (4 in Africa) concluded that distance education can be conducted at about one-third to two-thirds the cost of conventional education and in a number of cases the cost per graduate was also lower. However, studies have also shown that distance learning programs are not necessarily always cheaper than other methods of providing teacher education.

Other solutions have yielded notable results in terms of speed and cost-effectiveness. For example, as part of its pre-service teacher education reform, Guinea designed a face-to-face model that allowed it deliver approximately 7000 new contract teachers in three years at lower unit costs than the conventional system, while maintaining quality (ADEA 2005:183).

Nonetheless, ODL may still be the most cost-effective means of delivery in a number of circumstances; for example, in the case of rural or isolated teachers. Also, the large numbers of untrained teachers in-service and need for school-based continuous professional makes it almost certain that countries will need to integrate the use of teacher education at a distance in one form or the other within their regular teacher education systems (Lewin and Stuart 2003). This means that policy makers and education planners will need to give greater attention to the development of appropriate cost models that allow for the judicious and cost-effective integration of ODL and conventional delivery in modernizing their teacher training systems.

This is all the more so because ODL systems require significant upfront costs as well as a complex organizational arrangements. At the macro level, faced with severe budget pressures, African policy makers will require increasingly reliable evidence on costs to justify decisions on investment on various alternatives or mix of options. Once a decision is made to use distance education, educational managers, at the micro level, must make practical decisions about program size and technology options relative to costs. Evidence has shown that poor planning, particularly in relation to costs can greatly diminish or completely eliminate the benefits of programs that would have been otherwise cost-effective. (Butcher 2005).

A Dearth of Cost Studies

Cost studies help to identify the cost components and cost structure of a given project, and are essential to determining feasibility and long-term sustainability, as well as the more complex questions of cost effectiveness. However, studies show that there is a dearth of data on costs of distance learning in Africa (Murphy et al. 2002). Some of the data is not available to the providers of distance education programs either because they have not recorded it at all, or in ways which would permit analysis. Some costs are known, but are 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 analyze them for distance education programs. However, without knowing costs, it is impossible to tell how cost-effective programs are and assumptions about cost-savings in distance education continue without evidence either to support or disprove them (UNESCO 2001:38). These types of questions provide the rationale for these cost studies.

Objectives of the Study

These cost studies from sub-Saharan Africa are intended to contribute to increasing knowledge and understanding regarding the total costs of different modes of distance education, including the use of various technologies and thus guide investment decisions, as well as planning and implementation efforts. In addition to providing updated information on costs, they offer a valuable snapshot on current practice, at a time when policy makers must make urgent decisions on ways to drastically improve quality following huge expansions in enrolment. The overall objectives established for the studies were to obtain information on costs of teacher education at a distance in Africa that would:

- Enable assessment of overall cost implications at institutional and national levels
- Provide decision-makers with information about conditions under which different delivery modes have a comparative advantage.
- Help in evaluating past and proposed investment; and
- Support national policy discussions with specific evidence.

Selection of Case Study Institutions

The terms of reference established for the study called for a minimum of four and maximum of six institutions. A number of specific criteria were used to guide selection of the institutions:

- at least one case study institution would be drawn from each of the southern, eastern and western sub-regions of Africa;
- at least one case study institution would be located in a Francophone country;
- case studies would be from both single and dual mode institutions;
- case study institutions would operate in a context in which national implications could be drawn from their involvement;
- case study institutions would demonstrate:
 - current engagement on a range of established Open and Distance Learning contexts and approaches;
 - a focus on initial/upgrading teacher training programmes that include formal assessment systems;
 - local support systems in their teacher training programmes;
 - an awareness of ICT developments in teacher education;
 - an appropriate infrastructure to support the computing and telecommunications capacity required for the study;
 - organizational capacity and ability to support participating staff and facilitate case study requirements;
 - a willingness to host UKOU researchers and allow them to conduct data gathering and analysis in situ;
 - a willingness to participate in the review processes for the study and to be identified as a case study institution in the publication of the studies.

These selection criteria yielded five institutions, comprising a diverse and representative mix of institutions and institutional models: (i) an open university; a dedicated national distance teacher education institution; and, two dual mode universities, of which one is full-fledged university of education. All the programs examined were for in-service training of unqualified teachers both at the primary and secondary level and offering levels of qualifications ranging from basic certification to full degree programs.

1. National Teachers' Institute (NTI), Kaduna, Nigeria - Nigerian Certificate in Education (NCE)
2. Open University of Tanzania (OUT), Dar-es-Salaam, Tanzania - BSc with Education
3. University of Education, Winneba (UEW), Ghana - : Diploma in Basic Education
4. University of Fort Hare (UFH), Eastern Cape, South Africa - Primary BEd Distance Education Program
5. BSc with Education at the Université Cheikh Anta Diop (UCAD) Dakar, Sénégal - Teacher training program for unqualified secondary teachers

The different studies illustrate a variety of contexts but with many common issues and dilemmas. The summary tables at the end of every case give details of the costs in a common format in so far as possible, as well as a comparison of data across the cases (Table 33 and Table 34).

The studies also highlight the key steps and issues involved in costing distance education courses for teacher and show how different aspects of the costs of teacher education provision at a distance can be modeled and evaluated. Each cost study provides useful indicative data in different contexts to facilitate the cost evaluation of similar projects being planned elsewhere. Finally, a comprehensive bibliography of distance education cost studies in Africa, developed as part of the research, is provided at the end of the study.

Box 1. Costs and Cost-Effectiveness

Some principles

There are a number of important key concepts for a policy maker to consider when considering costs and cost-effectiveness of teacher education programs (Murphy et al., 2002):

- What is meant by fixed and variable costs.
- What the difference is between initial development costs and marginal costs.
- In which circumstances is ODL cheaper than traditional alternatives and what are the factors contributing to this.
- The importance of calculating opportunity costs.
- The need to bear in mind the unit of comparison when comparing different educational approaches.

First, it is important to stress that any economic analysis will inform the decisions about an ODL teacher education program that is being considered, but it is the policy maker who must set the parameters for any decision. Perhaps effectiveness or speed and extent of impact are given a higher priority. However, ODL teacher education programs, if delivered to scale, can often satisfy both cost and effectiveness criteria.

Fixed and variable costs

Fixed costs are the up-front investments needed to put in place the necessary infrastructure for making ODL available, regardless of the number of learners served. These include the investment costs of, for example, developing printed lessons, broadcasts and software (Murphy et al., 2002, p. 32). These costs do not vary with the number of learners.

Variable costs are costs that vary with the number of learners taking a program once it has been set up. These generally comprise educators' salaries, facilities, books, the costs of distributing printed lessons to learners or the costs of broadcasting prepared radio programs and other materials. For example, the number of radios, televisions and computers required in a program often depends on the number of learners (Murphy et al., 2002). It should be remembered that the training of educators to use new technology is also principally a variable cost, particularly if the software is changed or substantially upgraded frequently (Puryear, 2002).

What factors make ODL cheaper?

For most ODL programs, the fixed costs are high. A good deal of expertise is required to develop good quality self-instructional printed materials, for example, or to prepare good quality radio programs that help learning. However, the variable costs of ODL are generally lower than the variable costs of conventional teacher education programs. This is because conventional programs often require lecturers to support a number of students and as the number increases, more lecturers are needed. For ODL, the medium – print or radio broadcasts or computer programs – replaces the lecturer. When we are considering training teachers, professional training using ODL becomes more economical if it is spread among more users. This is where distance education systems often have a cost advantage over traditional systems, as it is possible to serve many teachers on a program, but the cost advantage is only gained when numbers are high. This is shown by the graph in *Figure 1*. As the number of students increases, total costs increase more slowly in distance education systems than in conventional systems. Once a particular number of teachers have been enrolled, the total cost of ODL teacher education (fixed plus variable) can become less than the total cost of a conventional system.

The average student cost for conventional instruction can be high because of the costs of educators' salaries, policies that limit educator-to-student ratios, and costs of building and maintaining facilities. The average cost of distance education programs can be lower when the fixed costs are spread over large numbers of learners, as well as because of the reduction in the amount of educator time in the learning process and because learning often does not take place within regular educational facilities. This is shown in *Figure 2* (Murphy et al, p.33).

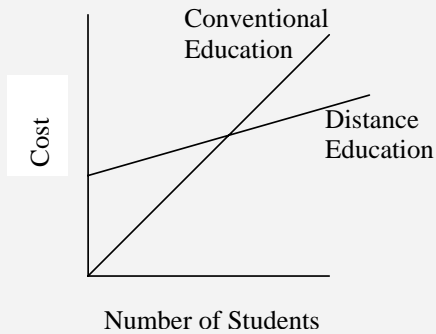


Figure 1: Total cost

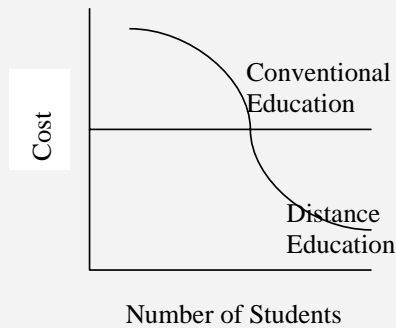


Figure 2: Average cost

Initial development and marginal costs: Another important concept to understand is the difference between initial development and marginal costs. The ‘marginal cost’ is the cost to add an additional learner to a teacher education program. In conventional teacher education in ‘bricks and mortar’ institutions, the average cost for each student and the marginal cost are often more or less the same. In education programs that use ODL, however, the tutor is replaced by a variety of learning materials or a combination of materials and a less expensive facilitator, and therefore the marginal cost of adding an additional student is always lower than the average cost. To maximize economies of scale, it makes economic sense to increase the number of student teachers on a professional development program until the marginal cost of adding another student approaches the average cost (Murphy, et al., 2002). In ODL courses, the initial development costs are high. The OU in the UK, for example, may take as long as three years to produce a course (although teacher education courses are often produced more quickly in response to government initiatives) and may cost as much as \$1 million, but the numbers studying that teacher education course may be large, which spreads the development costs over a large number of students, reducing the cost per student. The UK OU’s ‘Learning Schools Program’, a teacher education course on using computers for teaching in schools, was used by over 160,000 teachers.

The importance of calculating opportunity costs: When comparing costing issues of two systems such as ODL and conventional face-to-face teacher education, a third important concept is opportunity cost. A teacher who is taking part in an ODL program will probably continue to work while he/she is studying. Students on conventional campus-based programs cannot continue to work as they study. The income they forego is the ‘opportunity cost’ of the studies and should be calculated when comparing the costs of studying by ODL and through conventional methods.

The unit of cost comparison when comparing different educational approaches: A further concept to appreciate is the unit of cost comparison. The unit used most commonly is the cost per student, but this can be misleading since graduation rates are often lower at distance education institutions than at residential colleges or conventional schools (Jurich, 2000). When comparing conventional education to distance education, it may be more applicable to use cost per course completer, or the cost per graduate. However, this too may be inappropriate since there are students who study distance courses simply to further their education and not necessarily to graduate. In this case, cost per module of learning may be more appropriate (Murphy et al., 2002).

Comparisons of the costs of ODL to those of conventional teacher colleges: There are many examples where ODL materials combined with important but infrequent face-to-face support sessions have been significantly cheaper than conventional provision. Perraton and Potashnik’s (1997) review of 14 teacher development programs (four in Africa) concluded that distance education could be conducted at about one-third to two-thirds of the cost of conventional education. These programs, however, tended to rely mainly on printed self-instructional materials. It is not yet known what effects the use of newer technologies will have on costs or what the impact of collaborative use of open content initiatives such as TESSA will be. Nielsen and Tatto (1991) examined the cost-effectiveness of distance education for training teachers when compared to on-campus pre-service and in-service training in Sri Lanka and Indonesia. In Sri Lanka, the distance education program proved to be more cost-effective. In Indonesia, a similar comparison produced mixed results.

4. University of Education, Winneba (UEW), Ghana

BEd in Basic Education

In-service training provision for primary school teachers



Source: <http://www.virtualexplorers.org/ghana/map.htm>

Regional study centres		
Region	Town	Centre
Ashanti	Kumasi	UEW Campus
Central	Cape Coast	OLA Training College
	Winneba	UEW, North Campus
Eastern	Koforidua	SDA Training College
Greater Accra	Accra	Accra Training College
Northern	Tamale	Bagabaga Training College
Upper East	Navrongo	St John Bosco's Training College
Volta	Hohoe	St Francis' Training College
Western	Enchi	Enchi Training College
Brong Ahafo	Atebubu	Atebubu Training College
	Bechem	St. Joseph's Training College
Upper West	Wa	N J Ahmadyya Training College

The University of Education Winneba was set up by the government when Cape Coast University which had been created to train teachers decided to diversify. The government then decided to take up the training of teachers for primary education. In 1996, a second mandate was given to the University of Education Winneba for the initiative called Free Compulsory Universal Basic Education (fCUBE), and the university was charged with upgrading teachers so that they all had a Diploma. 3,500 teachers were going to be taken out of their classrooms. This is where distance education came in – to prevent teachers from being taken out of their classrooms. And the idea of IEDE (Institute of Educational Development and Extension) was born to keep teachers in their classrooms while being upgraded. Distance education fits in perfectly with our mission. Even with our five campuses, we could not train the large number of teachers distance education enables us to train.



This statement by Jonas Akpanglo-Nartey, pro-vice-chancellor of the UEW, provides the background of distance education (DE) in Winneba, and to the Diploma and BEd in Basic Education (BEd BE) it offers.

The Diploma and the BEd BE are offered to primary school teachers to upgrade their qualifications. They are open to teachers who obtained the Initial Training Certificate (three years' study) and have been teaching for three years. The BEd BE course takes five years, but

students who do not wish to study for that length of time can gain the Diploma at the end of the third year of the course.

Both for the Diploma and for the BEd BE, the length of training is significant.

	Pre-service training		In-service training	
New qualifications	Initial training	Teaching experience	Training for new qualification	Total time
Diploma	3 years	3 years	3 years	9 years
BEd BE	3 years	3 years	5 years	11 years

Table 1: Comparing duration of pre-service and in-service training courses, UEW

At national level, the government needed more and better qualified teachers, but the conventional teacher training courses did not provide a sufficient number of places to enable the provision of basic education for all. It was paramount that teachers were trained while they continued to teach their classes. Besides, this represented a saving: there was no need to pay unqualified replacement teachers while the teachers in post still received their protected salaries.

To this end, 'the IEDE was set up in 1993. Its mission was to develop a BEd program to enable teachers holding an Initial Training Certificate to study on a part-time basis for their degrees

without undue disruption in their work schedule' (UEW, 'Breaking new ground in education', p. 26).

'Two major factors influenced the course structure,' said Jonas Akpanglo-Nartey. 'Firstly, we do not want the DE students to have different knowledge from the residential students. Secondly, quality assurance: you want to be sure that the person comes out of your place with a degree comparable to that of other universities.'

The BEd BE is mostly a DE course but has elements of face-to-face teaching built into it. During the first three years of the program, students study ten courses. The length of each of these courses depends on the number of credits it represents. A three-credit course is studied over seven months and contains seven days of face-to-face workshops, whereas a two-credit course lasts five months and offers five days of face-to-face events. As well as the day workshops, DE students attend a week's revision and examination preparation in Winneba prior to their annual examinations, which also take place at UEW. Also if DE materials are not ready, students may attend replacement face-to-face events in the regional centres.

The pilot of the Diploma BE was launched in 1996. It included 196 students who enrolled and were inducted in 1998 and took their final examinations in 2001. The next cohort enrolled in 2000 and completed in 2003.

Since the present BEd BE began in 2002, 5,398 students have registered to do the program. Dr Kingsley Andoh-Kumi, Director of the IEDE since March 2004, commented: 'We are very proud that whereas other universities are working towards the government's recommendation that there should be parity of numbers between men and women students, we have actually trained more women than men.'

New student intakes by gender			
In	Males (%)	Females (%)	Total number
2002	53%	47%	1,096
2003	40.8%	59.2%	2,043
2004	40.9%	59.1%	2,259

Table 2: Annual student number of training showing percentage of male and female, UEW

In Ghana, students do not pay for tuition on a teacher training program. They are, however, expected to buy their own study materials and make contributions to their examination fees. Regardless of the course they attend, each student pays an annual fee set at 1.5 million Cedis (\$168) of which 0.5 million (\$56) must be paid at registration and the balance within four months. The costs are broken down as follows:

Material	Annual cost	
	Cedis	\$
Course books	650,000	73.00
Examination fees	250,000	28.00
Contribution to regional study centre	150,000	17.00
University overheads	450,000	50.00
Total	1,500,000	168.00

Table 3: Study material costs to students, UEW

The university obtains its budget from the Ghanaian Education Trust (GET) (2.5% of the VAT levied in Ghana), from donors and from the students' fees, which constitute the 'internally generated income'. In the budget year January–December 2004, students' contributions generated 5,738,700,000 Cedis (\$644,500), 67.63% of the internally generated income and 59.77% of the IEDE's overall income.

UEW trained 10,000 DE students in 2005, rising to 17,000 in 2006.

During each of the first three years, students study ten different courses (see Table 5 for details). Courses within the BEd program are organized depending upon a range of factors from the length of course to the availability of university-based tutors. The organization of a year could look as follows (each line represents one course, and each block in the line one month):

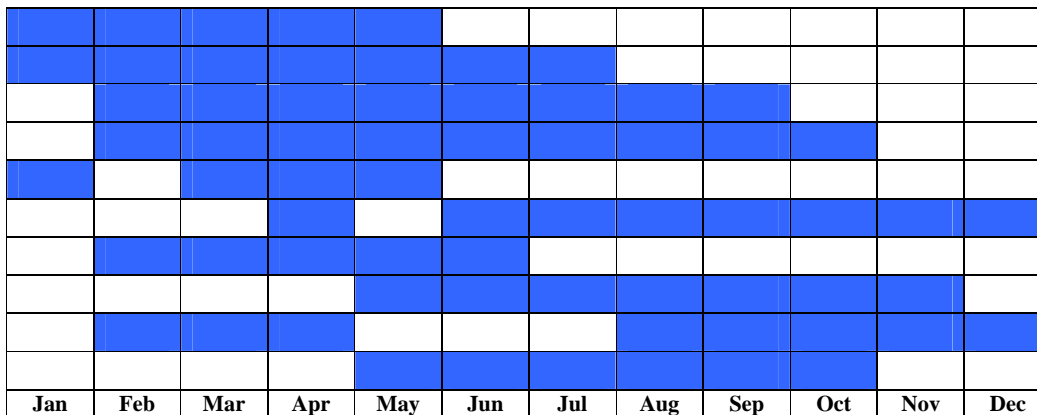


Figure 3: Arrangement of courses on the BEd BE for one of the first three years, UEW

The central team is composed of 26 members who belong to three different centres of the IEDE. The team includes 14 lecturers and 12 supporting staff (including two graphic designers and the network administrator), all based at Winneba.

The coordinators of the 12 regional centres are not part of the central team.

The BEd BE is still being developed and, at the moment, only the program for the first three years has been devised. Courses can be two or three credits address subject knowledge and methodology (see *Table 5* for further details).

The final two years of the BEd BE are still at the planning stage. As DE students are teachers in post, it is felt that they will not need to do supervised teaching practice. It is envisaged that they will do some reflective work and that part of their professional development will involve them writing papers in professional practice.

Two modes of study will be offered: a sandwich course (where students fit face-to-face learning into their school vacation periods) or DE.



Tutor Isaac Tete-Mensah told us: ‘In effect, the content of the first three years of the BEd BE already equates to that of a degree.’ Dr Andoh-Kumi confirmed that the students’ workload was heavy and that the IEDE had started to consider ways of lessening it: ‘We need to think of possible models whereby the number of courses in the first three years would be streamlined to five or six courses instead of ten. In the first year, the courses could be English, Math, Science, Communication or Study Skills and one education course. Year 3 would provide more time for more practice and would enable students to write more about their practice.’ It can be envisaged that in the not too distant future, the university-based Academic Distance Education Committee will consider these and review the course design. In the case of DE programs, there is government guidance to ensure comparability with face-to-face and other university courses.

Mr Isaac Tete-Mensah

DE materials are planned for each of the 30 courses that compose the first three years of the BEd BE. Currently, 17 out of the 30 planned courses have been assembled into professionally produced and printed books. The materials are written by the UEW-based lecturers, who have been trained in writing DE booklets. Writers receive an incentive of 4,000,000 Cedis (\$448) per credit because they write these materials on top of an already heavy workload. So, for a three-credit course, a writer receives 12,000,000 Cedis (\$1,344). In total, the full direct cost of developing text materials for a three-credit course is *c.* \$2,650.

Because the university is not allowed to charge for tuition costs, the cost of face-to-face events need to be subsumed into that of the production of DE materials. For the year 2004, the sum was 5,650,700,000 Cedis (\$634,617).

Each student receives a student handbook, which sets out the study timetable and details of self-assessment. In the future, this handbook will guide students in selecting the appropriate sections of the published books to match the needs of the streamlined program.

The IEDE also has a computer laboratory for the students, based in Winneba. It is used by face-to-face students and by many staff. This has real cost implications for IEDE, who had planned an expense of 100,000,000 Cedis (\$11,231) for Internet charges, but is going to face a bill of 240,000,000 Cedis (\$26,954).



The computer laboratory at UEW

The IEDE is planning to distribute computers to each of the 12 regional centres. The Carnegie Foundation has funded this development.

A recording studio is being built to enable the production of audio and video cassettes and CD-ROMs that will allow for a greater range of media being used in the creation of DE materials. Dr Andoh-Kumi stressed that the procurement system used by the university could be cumbersome and makes planning much slower than desirable.

The support to students is provided by UEW-based lecturers, the regional centre coordinators and tutors.

UEW-based lecturers teach through the DE materials they write. They also teach at the monthly workshops linked to each of the courses; as these workshops take place in the regional centres, this has an impact on their workload. An IEDE member comments: 'One of the lecturers teaches on three courses to both regular (face-to-face) students at the university and distance education students. Establishing the workshop timetables is therefore very complex. And if you consider that the lecturers based at the university mark all the exams for all students in a cohort, you can understand how serious the issue of workloads is. Don't forget there is one examination per course.'

The centre coordinators are permanent members of staff who:

- collect the questions students have about the courses or the materials and send them to the tutors. When they receive the answers back from the tutors, they send these back to the students;
- collect the assignments and send them to tutors who mark them. When the assignments are marked, they are sent back to the centre coordinators who collect and record the marks before sending the assignments back to students;

- send the results of assignments and the workshop record of attendance back to the field operation coordinator in Winneba.

The tutors (approximately 100) are part-time members of staff from other universities or training colleges. They usually need to have a second degree, although in more remote areas or for subjects where it is more difficult to recruit staff, a very good first degree and at least five years of teaching experience will be sufficient. These tutors:

- are available to students to discuss anything linked to the course or personal;
- teach students during face-to-face workshops at the centre;
- respond to the students' queries via the centre coordinators;
- mark the students' assignments set in the DE materials.

The BEd BE assessment, at least for the first three years, is a mixture of continuous and summative assessment. Each of the course books contains assignment questions. The three-credit courses have four assignments; two-credit courses have three. The assignments represent 40% of the final assessment and the final examination counts for 60%. In April, during the school holidays, the DE students spend two weeks on the UEW campus. The first week is a revision week. This is followed by an intensive examination week during which they sit ten examinations, two a day, one in the morning and one in the afternoon. The accommodation is arranged by the university, but students are expected to pay for it themselves.

An overview of the assessment model is as follows:

Type of course	Number of courses	Number of assignments per course	Total number of assignments for the year	Total number of examinations for the year
3-credit course	7	4	28	-
2-credit course	3	3	9	-
Total for one year			37	10
Total for whole program (3 years)			111	30

Table 4: Summary of assessment model, UEW

The matriculation also takes place during the exam week. The students' ID photos are taken and they are issued with an ID card that bears their registration number. This enables them to apply for two types of low-interest loans.

The examinations are set and marked by lecturers at UEW. The University of Cape Coast provides external moderation and assessment of the examination papers. At present, usually only the university lecturers can mark papers, as they have a second degree, but just a few of the more highly qualified tutors have also been recruited for marking purposes.

Isaac Tete-Mensah stated that: 'Students who do very well and get an upper in their Diploma in Education at the end of the third year can be selected to continue to study at the regular university. This provides an incentive.'

The marking of examinations and the publication of results present a real challenge to the IEDE. Examinations are usually only be marked by the university lecturers, some of whom teach on up to three courses per year, and thus, for any one year of the program, they may have to mark between 6,000 and 7,000 papers. Consequently, it can take a long time for examination results to be compiled and published. It would appear that students who completed their examinations in April 2004 had not received their results by the end of November 2004.

Quality assurance (QA) at UEW is still in its infancy. Jonas Akpanglo-Nartey stated: ‘Until September last year, this was left to faculties and departments. As of September 2003, we set up an office, a quality assurance unit to evaluate the courses in each department on an annual basis, and this includes the distance education program ... This unit is brand new and as yet there has been no overall feedback.’

The QA unit will invite students to provide user feedback at the end of their course. It will also consider the pass rates.

In 2002, the results of DE students were similar to those of regular students. Despite the fact that there appears to have been some difficulty tracking students’ results in the early days of the program, the success rate on the Diploma in Basic Education in recent years is high. ‘Approximately 90% complete the course,’ said Dr Andoh-Kumi. ‘The ability to finish depends on how hard you work. If you trail more than two courses, you have to withdraw, but there is a possibility to resit the examination as an external candidate.’

Jonas Akpanglo-Nartey elaborated this statement: ‘The figures they gave us last year show that out of 200 students, only two dropped out, actually, on paper it was 12, but 10 went back to the university.’ And he attributed the credit to the students: ‘The success rate of DE students has been very high thus far, and they should get the credit for the great success rate, much more so than the university. They know that their salary will improve, they know that their status will improve, so they are highly motivated.’

The first implementation of the program has revealed a number of issues, some of which are already being considered by colleagues at UEW. Each raises a mix of educational, planning and cost issues. These include:

Program structure –to reduce the program content

The IEDE is already considering this issue and rehearsing some possible ways forward. A streamlined program could be achieved by:

- a stronger focus on fewer subjects;
- continuing to use the present high quality materials by steering the students through them via guide books.

Amount of assessment: continuous and summative

The assessment model presents many demands on students, tutors and UEW lecturers. The present assessment arrangements are in place to forestall criticism that the quality of teachers trained by DE might not equate to that of teachers trained on the face-to-face model. It is

nevertheless the case that the time devoted to assessment consumes a significant amount of the available resources.

ICT training

Donor organizations have made available 120 computers to be installed within the regional centres. With the introduction of new technology comes the challenge of training personnel to use the new facilities and maintaining the computers and facilities and associated costs. Training programs could be developed for centre coordinators on the use of ICT for record keeping and for tutors on the use of electronic communications in maintaining contact with the centrally based team.

Courses offered for the Diploma in Basic Education, UEW

1st year

English for the Basic School Teacher I
Mathematics for the Basic School Teacher I
Introduction to Integrated Science I
Education and Culture
The Primary School Child
General Methods of Teaching
Introduction to Special Education
Methods and Materials for Basic School Teaching
Introduction to Information Technology
Communication Skills

2nd year

English for the Basic School Teacher II
Mathematics for the Basic School Teacher II
Introduction to Integrated Science II
Methods and Assessment in English Language
Methods and Assessment in Mathematics
Methods and Assessment in Integrated Science
Principles of Curriculum Design
Education Technology
Professional Practice
Research Methods

3rd year

Music and Dance for the Primary School Teacher
Physical Education for the Primary School Teacher
Religious and Moral Education for the Primary School Teacher
Ghanaian Languages and Cultures for the Primary School Teacher
Methods and Assessment in the General Courses
Curriculum Materials Study and Development
School and Community Relations
Primary School Administration and Supervision
Professional Practice
Long Essay/Project

Table 5: Courses offered for the Diploma in Basic Education, UEW

Summary Tables

6A. Summary of operating budget for the Diploma in Basic Education, UEW			
Calculated on the basis of current trainee intake for one year			
	Cost in Cedis	Cost in US\$	% of overall cost
a) Face-to-face tuition			
* Teaching aids and materials	50,000,000.00	5,615.00	0.52%
* Workshop and seminars	10,000,000.00	1,123.00	0.10%
Subtotal a)	60,000,000.00	6,738.00	0.62%
b) Distance education training materials			
Subtotal b)	5,650,700,000.00	634,617.00	58.86%
c) Support to students			
* Rehabilitation of study centres	1,000,000,000.00	112,308.00	10.42%
* Computers, other learning equipment & Internet charges	500,000,000.00	56,154.00	5.21%
* Stationery expenses & postal charges	510,000,000.00	57,277.00	5.31%
* Telecom charges	50,000,000.00	5,615.00	0.52%
* Library books & maps and newspapers & periodicals	89,861,058.00	10,092.00	0.94%
* Repairs and maintenance of official vehicles	150,000,000.00	16,846.00	1.56%
* Travel & transport	500,000,000.00	56,154.00	5.21%
* Vehicle running expenses	400,000,000.00	44,923.00	4.17%
Subtotal c)	3,199,861,058.00	359,369.00	33.33%
d) Sundries			
* Official hospitality	50,000,000.00	5,615.00	0.52%
* Sanitation	30,000,000.00	3,369.00	0.31%
* Sundries expenses	10,000,000.00	1,123.00	0.10%
* Purchase of vehicles	600,000,000.00	67,385.00	6.25%
Subtotal d)	690,000,000.00	77,492.00	7.19%
Grand total	9,600,561,058.00	1,078,217.00	100.00%

When we build on the above operating budget to include costs not directly attributed to the programme within the institution's operating budget systems (for example, full time academic staff costs), it is possible to draw out a fuller picture of the programme cost structures. This extrapolates to an overall view of the programme cost structures over the programme life:

6B. Summary projected cost structure for the Diploma in Basic Education, UEW		
Trainee base		
Trainees enrolled to date	5,400	
Trainees currently enrolled annually	1,800	
Trainee graduates to date	1,600 (estimated)	
Total projected trainee enrolments	65,000 over programme life of 10 annual cohorts	
Presentation costs per trainee starter		
	\$	%
Learning resources	25	10
Trainee support	50	15
Assessment and quality assurance	125	40
Programme resources	100	35
Total per trainee	300	100
Presentation and development costs		
	\$	
Total per trainee starter	300	
Total per trainee per year	100	
Total per trainee graduate	350	
Fixed and variable costs per trainee starter		
	\$	%
Fixed costs	120	40
Variable costs	180	60

Table 6: Summary budgets for the BED in Basic Education, UEW

Comparative salary table		
Average annual salary of:	Cedis	\$
a lecturer	42,755,217.00	4,802
a teacher	15,566,504.00	1,748

Table 7: Salary comparisons, UEW

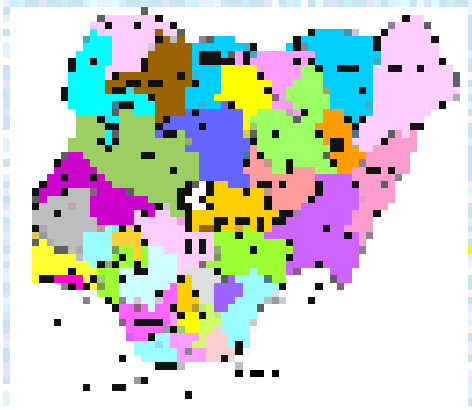
Institution details, UEW		
• Total number of face-to-face students as at January 2003		10,000
• Total number of distance learning students as at January 2003		3,500
Total student numbers as at January 2003		13,500
• Total numbers of academic staff as at January 2003		230
• Total numbers of administrative and professional staff as at January 2003		181
• Total annual budget	In Cedis	218,004,746,600.00
	In US \$	24,483,610.00

Table 8: Institution details, UEW

5. National Teachers' Institute (NTI), Kaduna, Nigeria

The Nigerian Certificate in Education (NCE) by Distance Learning Systems (DLS)

An in-service training qualification for basic grade and unqualified primary school teachers



Source: <http://www.motherlandnigeria.com/geography.html#States>

NTI Zones	Federal states	
NORTH CENTRAL ZONE	FCT Abuja Benue Kogi Kwara	Nasarawa Niger Plateau
NORTH EAST ZONE	Adamawa Bauchi Borno	Gombe Taraba Yobe
NORTH WEST ZONE	Kaduna Kano Katsina Kebbi	Jigawa Sokoto Zamfara
SOUTH SOUTH ZONE	Akwa Ibom Bayelsa Cross River	Delta Edo Rivers
SOUTH WEST ZONE	Ekiti Lagos Ogun	Ondo Osun Oyo
SOUTH EAST ZONE	Abia Anambra Ebonyi	Enugu Imo



Ruth in the Kaduna Study Centre Science Lab

'I chose to do the NCE by DLS because it enables me to work at the same time as I study.' Isaac, the president of the students' union told us. Ruth added: 'I am married and doing the NCE by DLS means that I can look after my children while I study.' Deborah valued another aspect of the course, which enables her to train while she continues teaching: 'You can impart what you have been learning immediately.' Justina added: 'Through the course, I have learnt to identify pupils with learning difficulties and how to help them better.'

The Nigerian Certificate in Education by Distance Learning Systems (NCE by DLS) is an in-service training course for primary school teachers. It was introduced in 1990 to upgrade teachers with the former minimum teaching qualification Teacher Certificate II (TCII) and to train unqualified teachers. It also serves to 'improve the basic background knowledge of those who may wish to pursue their studies at a higher level' (*National Teachers' Institute Annual Report for 2003*, p. 35).

The NCE has become the minimum teaching qualification for teachers and the upgrading of teachers is required to accompany the federal policy of Universal Basic Education (UBE). The National Teachers' Institute (NTI) was approached by a number of states to provide an NCE program and launched the NCE by DLS after a feasibility study 'showed that 89% of respondents were ready to undertake the course' (*NCE by DLS Students' Handbook*, p. 2)

The course is a bi-modal distance learning course lasting four years: students study using distance learning materials and also attend weekend and longer intensive face-to-face sessions at study centres. They also undertake two six-week teaching practice placements, usually in two different schools. The strong support system that has been designed for this course is detailed below.

Started in 1990, the course was refocused in 1999 with the introduction of UBE. It was revised again in 2003 to meet the 'Minimum Standards' brought in by the National Commission for Colleges of Education (NCCE). This last revision, which took place outside the NTI normal five-year review of materials cycle, represented a considerable expense for the NTI.

In 2003, the number of graduates from the NCE by DLS totalled 62,149 since the inception of the program in 1990.

In 2005 93,547 students registered on the program and the breakdown per gender and cycle (year) is as follows:

Cycle	2003			2004		
	M	F	Total	M	F	Total
I	12,212	17,082	29,294	11,719	17,730	29,449
II	7,252	13,113	20,365	9,985	15,609	25,594
III	9,115	12,124	21,239	7,285	11,745	19,030
IV	8,636	9,616	18,252	8,451	11,023	19,474
Total	37,215	51,935	89,150	37,440	56,107	93,547

Table 9: Students by gender in 2003 and 2004, NTI



Mrs Aisha Saidu Song, a subject specialist commented: 'DLS is particularly well suited to women: it enables them to fit their studies with their family and professional commitments. This explains the high proportion of women on our course. In traditional institutions, the proportion of men is higher.'

Mrs Aisha Saidu Song in conversation with Mike Bird

In 2004 and 2005 the intake has been fairly stable but from one year to the next, the number of students can decrease drastically:

Men					
2003		2004		Diff	%
Cy. I	12,212	Cy. II	9,985	- 2,227	- 18.2%
Cy. II	7,252	Cy. III	7,285	+33	+ 05%
Cy. III	9,115	Cy. IV	8,451	- 654	- 7.3%
Women					
2003		2004		Diff	%
Cy. I	17,082	Cy. II	15,609	- 1,473	- 8.6%
Cy. II	13,113	Cy. III	11,745	-1,368	- 10.4%
Cy. III	12,124	Cy. IV	11,023	-1,101	- 9.1%
Total					
2003		2004		Diff	%
Cy. I	29,294	Cy. II	25,594	- 3,700	- 12.6%
Cy. II	20,365	Cy. III	19,030	- 1,335	- 6.6%
Cy. III	21,239	Cy. IV	19,474	- 1,765	- 8.3%

Table 10: Variations in numbers of students by gender in 2003–4, NTI

The dropout can be explained by a number of reasons ranging from personal circumstances to their employers refusing students permission to continue, an unsuccessful examination, or lack of opportunity to complete their teaching placements.

The small increase in the number of men in 2004 is due to students rejoining the course after having deferred or retaken one or several examinations.

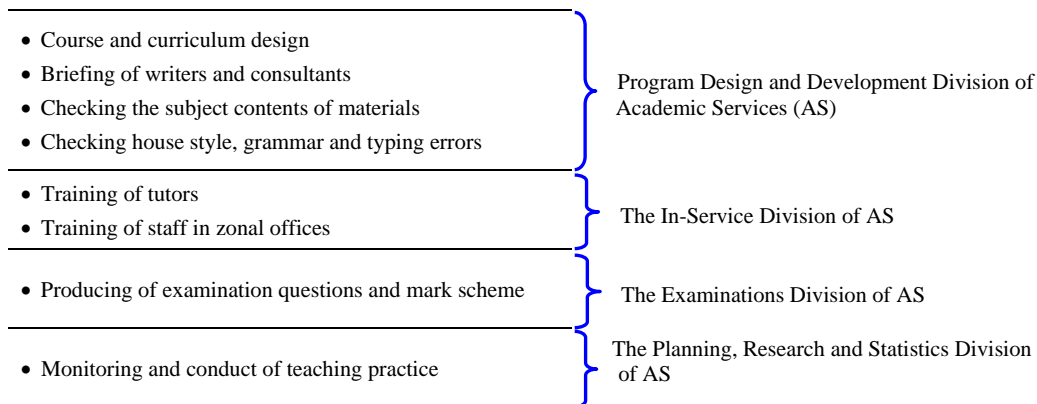
This fluctuation in numbers is of concern to Dr Abdurrahman Umar, director of Academic Services, who declared: ‘We have commissioned a piece of software to enable us to track students who repeat parts of the course or who relocate, as this makes our record keeping problematic.’ Number fluctuations make planning difficult and can have serious consequences: the number of students falling below 80 would cause a study centre to close and a subject group would disappear from a centre if the number of students became less than five per subject per cycle. This has employment implications for tutors and financial repercussions for the NTI.

Dr Umar and his colleagues acknowledge that the course could expand, but funding and staffing constrain this possibility. ‘The Federal Ministry of Education has not increased our grant since 1990,’ Dr Umar stated, ‘and the students’ fees do not cover the full cost of running the NCE by DLS. The other constraint is the embargo on staff recruitment imposed by the Ministry. We just cannot cater for any more students with our level of staffing and pray that we will not lose any staff as seeking approval to replace them is extremely difficult.’

The NCE by DLS is designed to take four years, but most students take five years and some of them may even take up to eight years, due to retake and other constraints. Each year or cycle is divided into two semesters.

‘There is not a central team for the NCE by DLS as such,’ Dr Umar explained. ‘Different departments contribute to the program for about a third of their time.’ Therefore, the cost for NCE by DLS of the central staff is estimated at ₦82,250,000 (\$623,397) per annum (35% of overall personnel costs).

At headquarters in Kaduna, departments provide vital services for the NCE by DLS program.



<ul style="list-style-type: none"> • Students' records and data • Distribution of materials • Students' complaints 	The Field Operations and Student Services All departments as appropriate
<ul style="list-style-type: none"> • Quality assurance 	

Table 11: Services provided in Kaduna, NTI

		Cycle I	Cycle II	Cycle III	Cycle IV
Semester 1		Module studies TMA's & Tests	Module studies TMA's & Tests	Module studies TMA's & Tests	Module studies TMA's & Tests
		Examinations	Examinations Teaching practice	Examinations	Teaching practice
Semester 2		Module studies TMA's & Tests	Module studies TMA's & Tests	Module studies TMA's & Tests	Module studies TMA's & Tests
		Examinations	Examinations	Examinations	Examinations

Table 12: The structure of the NCE by DLS, NTI

Within this structure, all students study the compulsory elements and one or two subjects that can be chosen according to the matrix below:

Compulsory elements

PLUS

1 **double major** (one of the subjects opposite)

OR

- Education, including practical teaching
- General Education studies
- Project
- English Language
- Integrated Science (ITS)
- Physical and Health Education (PHE)
- Social Studies (SOS)

Primary Education Studies and 1 single major (one of the subjects opposite)

- Christian Religious Studies (CRS)
- Cultural and Creative Arts (CCA)
- English
- ITS
- Islamic Religious Studies (IRS)
- Math
- SOS

OR

2 single majors (pairs of subjects as listed opposite)

- English + CRS or IRS
- CCA + English
- English + SOS
- ITS + Math
- SOS + CRS or IRS

Table 13: Course structure of NCE by DLS, NTI

The students pay according to the modules they study and therefore the materials they receive. So students choosing one double major will be charged less than one choosing two single majors. So the fees vary according to subjects.

- ITS ₦59,900 (\$454)
- CCA or PHE ₦55,700 (\$422)
- Others ₦47,700 (\$361)



The Science kit

Most students pay their fees by banker’s draft to the state coordinators. In some of the Northern states, arrangements for payments are made between the state office and the Primary Education Board for the cost of materials to be withheld from the students’ salaries in small installments (for teachers’ salaries, see Table 18).

‘There is no evidence that the higher cost of a course has any influence on the number of students that choose it,’ one senior member of staff assured us.

Currently, students study mostly from printed materials: the module books.

In 2003, the Field Operation and Students Services (FOSS) distributed 1,205,788 books in the whole of Nigeria. The production and distribution of these printed materials for 25,000 students total ₦518,647,500 (\$3,930,985) over four years, by far the biggest budget head for non-staffing costs.

Audio-visual materials include cassettes and science and math kits. The cost of these for 25,000 students over four years is ₦7,619,970 (\$57,754). Audio and video cassettes tend to be used with

the tutors during face-to-face sessions at the study centre. Nonetheless, students can purchase the audio cassettes at ₦150 (\$1.14) each. The study centres provide listening and viewing facilities.

The NCCE has prescribed that an awareness of computers should be in the teacher training curriculum. This is currently done from books. The federal government has provided funds for the purchase of computers for the state offices. The institute is also seeking further funding to enhance its computer network. While this presents real advantages for NTI, it will also generate training and maintenance needs that require careful costing.



All five students agreed with Deborah that: 'Our tutors are always here when we need them. We just need to call in at the study centre.' They also agree that the face-to-face sessions are particularly useful, as 'they allow the tutors to get to know the students better; during the tutorial students can air their problems; they strengthen relationships and enable interaction and group learning.'

Students Ruth, Ene, Deborah, Isaac and Justina discussing DLS with Mike Bird

The support systems are structured hierarchically:

- At headquarters in Kaduna, FOSS 'develops and implements strategies that ensure effective students' support – both academic and non-academic' (*NTI 2003 Annual Report*, p. 33).
- Nigeria has been divided into six zones (see first page of this cost case study). Each zonal office is in charge of the state offices in its zone and liaises between the state offices and headquarters.
- The state offices or field centres are headed by a coordinator and have the following functions:
 - registration of students;
 - distribution and sale of materials;
 - identification and supervision of study centres;
 - recommendation of supervisors and course tutors;
 - payment of honoraria to supervisors and course tutors.

Like other full-time staff, the 37 coordinators are paid by the NTI headquarters.

- Study centres are the places where students and tutors meet for formal and informal discussions, tuition, practicals and counselling. They are headed by supervisors whose main duties include monitoring the activities of the tutors and keeping records on the tutors, students and finance. Across the country, the 301 supervisors each receive an annual honorarium of ₦12,000 (\$91).
- Tutors perform the dual function of tutoring and counselling. They guide the students on how to make the best use of the DLS materials. They also mark and provide feedback on the tutor marked assignments (TMAs).

In 2004, there were 7,386 tutors who receive ₦200.00 (\$1.50) per hour. The number of hours they work depends on the course on which they tutor. Most of the tutors we met at the Kaduna study centre taught on two courses. ‘This would be a maximum,’ a senior member of the central staff commented. The number of hours they work therefore varies according to the number of courses they teach, but not according to the number of students they tutor. The Education course tutors fare less well than tutors of subjects like ITS or math, where numbers are lower. NTI estimates the cost of support elements as follows:

Description	Cost for 25,000 students for 4 yrs		Cost per student for 4 yrs		Cost per student per 1 yr	
	₦	\$	₦	\$	₦	\$
Identification of centres	3,719,500	28,191	149	1.13	37.20	0.28
Centre supervisors’ honoraria	14,878,000	112,765	595	4.51	148.80	1.13
Course tutors’ honoraria	208,292,000	1,578,707	8,332	63.15	2,083	15.79
Recruitment of lab attendants	3,719,500	28,191	149	1.13	37.20	0.28
Payment of centre incentive	18,597,500	140,956	744	5.64	186	1.41
Payment of centre running costs	92,987,500	704,780	3,719	28.20	930	7.05
Training of tutors and supervisors	29,756,000	225,529	1,1900	9.02	297.5	2.25
Total	371,950,000	2,819,121	14,878	112.76	3,720	28.19

Table 14: Average cost of student support on the basis of 25,000 students over four years, NTI

Other aspects of support include the *Students’ Handbook*, which is written for all constituencies, students, tutors and centre coordinators. This document is sent to all enquirers with the application forms against a charge of ₦150.00 (\$1.13).

During each semester, there is a mixture of TMA tests and examinations for all subjects and all cycles. Practical aspects are also assessed, as are all teaching practices. The project, which is a mini-dissertation, is written as a result of a research project that takes place during cycles 3 and 4.



There are no costs for the setting of examinations questions as they are set by the experts of the Examinations sections at headquarters. Their salaries are paid by the federal government. The TMA questions are contained in the module books and therefore set by the authors when they write the materials.

The examination room at the study centre in Kaduna

Assessment has a heavy cost as shown below:

Description	Cost for 25,000 students for 4 yrs		Cost per student for 4 yrs		Cost per student per 1 yr	
	₦	\$	₦	\$	₦	\$
Project supervision and marking	4,508,000	34,167	180	1.37	45	0.34
Practicals (chemicals, etc)	15,778,000	119,586	631	4.78	158	1.20
Teaching Practice	38,318,000	290,423	1,533	11.61	383	2.90
Examinations (invigilation, stationery and marking)	255,000,000	1,932,721	10,200	77.31	2,550	19.32
Total	313,604,000	2,376,899	12,544	95.07	3,136	23.77

Table 15: Average cost of assessment on the basis of 25,000 students over four years, NTI

The quality assurance (QA) of the program is very rigorous. Firstly, there is an accreditation of the course every five years by the NCCE. NTI needs to meet all the expenditure for this, including the overnight accommodation and travel expenses of the accreditors. An internal QA framework was developed, produced and distributed in 2003, after being approved by the board of studies and governing council. FOSS monitors zonal offices and carries out QA visits to a sample of state offices and study centres regularly. Each level of office then monitors closely the work of the offices within its jurisdiction. Reports are written and submitted to headquarters. QA had been costed thus:

Description	Cost for 25,000 students for 4 yrs		Cost per student for 4 yrs		Cost per student per 1 yr	
	₪	\$	₪	\$	₪	\$
Monitoring (subject and administrative)	21,394,508	162,155	856	6.49	214	1.62
NCE advisory committees in state offices	8,288,000	62,817	332	2.51	83	0.63
Accreditation	37,296,000	282,677	1,492	11.31	373	2.83
Award meetings	4,144,000	31,409	166	1.26	41.5	0.31
Total	71,122,508	539,059	2,845	21.56	711	5.39

Table 16: Average cost of QA on the basis of 25,000 students over four years, NTI

NTI has identified a number of issues that are already being addressed. Each raises a mix of educational, planning and cost issues. These include:

- **The annual budgetary allocation from the federal government** has not been increased in real terms since 1990. Yet the numbers of students opting for the NCE by DLS has grown extensively.
- **In addition, from 2006, the TCII will no longer be the minimum qualification for teachers.** ‘The TCII,’ as Dr Umar stated, ‘is a very lucrative course that subsidizes the NCE by DLS.’ Dr Umar and his colleagues have already started planning and implementing a range of Diploma courses that should prove as remunerative as the TCII.
- **The creation of the computer network** will help palliate the current government embargo on staffing and increase efficiency in communication and record keeping. It will also help to ensure that the NCCE recommendation that all students have awareness of ICT becomes a practical reality.
- **The cost of examinations.** Dr Umar stated that the institute is considering different assessment models. If the examination load was reduced, the savings could be used in other parts of the program.

Examples of costs which NTI could investigate include:

- Calculating break-even points for new programs to plan for the optimum number of students that would ensure sufficient revenues for the NCE by DLS to be adequately subsidized. This will allow the institute to explore options for new models and cost structures for these programs to generate the required financial returns.
- Developing a computer infrastructure has repercussions in terms of training, maintenance and staffing. Investigating costing options would enable NTI to calculate these costs and plan for the expansion of the network. By separately identifying the needs for capital and replacements costs, running costs of the computer equipment and additional staffing costs, NTI could explore the different costing elements within this proposal.
- NTI should model the cost of various forms of assessment and permit the exploration of where the savings can best be used. If, for instance, the number of examinations was halved

(examinations once a year instead of once a semester), the yearly savings for 25,000 students could be ~~₦~~31,875,000 (\$241,490), linked to assessment elements to which would be added the ~~₦~~518,000 (\$3,926) spent on award boards, with a total saving of ~~₦~~32,393,000 (\$245,416). Cost calculations could indicate precisely how many more students could be trained, or how many more computers could be purchased, taking into account the accompanying expenditure, or a mixture of the two. Such calculations indicate that an additional cohort of 500 students could be trained or 20–25 peer-to-peer 10-computer networks could be acquired and installed.

Summary Tables

17A. Summary of the annual operating budget for the NCE (DLS), NTI			
Calculated on the basis of current trainee intake for one year			
	Cost in Naira	Cost in US \$	% of overall cost
a) Admission and registration			
* publicity	975,500.00	7,394.00	0.30%
* production & distribution of application forms	4,268,250.00	32,350.00	1.30%
* admission processing	1,196,750.00	9,071.00	0.37%
* induction	335,000.00	2,539.00	0.10%
Subtotal a)	6,775,500.00	51,354.00	2.07%
b) Distance education training materials			
* writing of course, review and typesetting	37,878,750.00	287,094.00	11.57%
* editing & critiquing of course	27,680,625.00	209,800.00	8.45%
* printing of course materials	55,361,250.00	419,600.00	16.90%
* distribution of printed materials	8,741,250.00	66,253.00	2.67%
* audio-visual material	1,904,993.00	14,439.00	0.58%
Subtotal b)	131,566,868.00	997,186.00	40.17%
c) Support to students			
* identification of centres	929,875.00	7,048.00	0.28%
* centre supervisors' honoraria	3,719,500.00	28,191.00	1.14%
* course tutors' honoraria	52,073,000.00	394,677.00	15.90%
* recruitment of lab attendants' honoraria	929,875.00	7,048.00	0.28%
* payment of centre incentive	4,649,375.00	35,239.00	1.42%
* payment of centre running cost	23,246,875.00	176,195.00	7.10%
* training of tutors and support supervisors	7,439,000.00	56,382.00	2.27%
Subtotal c)	92,987,500.00	704,780.00	28.39%
d) Cost linked to assessment			
* project supervision and marking	1,127,000.00	8,542.00	0.34%
* practicals (chemicals, etc.)	3,944,500.00	29,897.00	1.20%
* teaching practice	9,579,500.00	72,606.00	2.92%
* examinations	63,750,000.00	483,180.00	19.46%
Subtotal d)	78,401,000.00	594,225.00	23.94%

e) <i>Quality assurance</i>			
* monitoring (subject and administrative)	5,348,627.00	40,539.00	1.63%
* NCE advisory committees to state offices	2,072,000.00	15,704.00	0.63%
* accreditation	9,324,000.00	70,669.00	2.85%
* award meetings	1,036,000.00	7,852.00	0.32%
Subtotal e)	17,780,627.00	134,764.00	5.43%
Grand total	327,511,495.00	2,482,309.00	100%

When we build on the above operating budget to include costs not directly attributed to the programme within the institution's operating budget systems (for example, full time central academic staff costs), it is possible to draw out a fuller picture of the programme cost structures. This extrapolates to an overall view of the programme cost structures over the programme life:

17B. Summary projected cost structure for the NCE (DLS), NTI		
Trainee base		
Trainees enrolled to date	175,000	
Trainees currently enrolled annually	24,000	
Trainee graduates to date	62,000	
Total projected trainee enrolments	381,000 over programme life of 19 annual cohorts	
Presentation costs per trainee starter		
	\$	%
Learning resources	75	15
Trainee support	150	30
Assessment and quality assurance	100	20
Programme resources	175	35
Total per trainee	500	100

Presentation and development costs	\$	
Total per trainee starter	500	
Total per trainee per year	125	
Total per trainee graduate	650	
Fixed and variable costs per trainee starter		
	\$	%
Fixed costs	175	35
Variable costs	325	65

Table 17: Summary of the annual budget for the NCE (DLS), NTI

Comparative salary table		
	Naira	\$
NTI lecturer's average annual salary	1,000,000.00	7,580.00
Study centre supervisor's annual honoraria	12,000.00	91.00
Course tutor's hourly honoraria* ¹	200.00	1.52
Beginning teacher with the NCE's annual salary	272,928.00	2069.00
Teacher with the TCII's average annual salary	128,097.00	971.00
* ¹ As course tutors' hours depend on the number of courses on which they teach – it is unrealistic to attempt to give an annual earning.		

Table 18: Comparative salary table, NTI

Institution details, NTI		
• Total student numbers as at January 2003 (all distance learning)	223,244	
• Total staff numbers as at 2004/05	1,076	
• Total annual budget for 2004/05	In Naira	1,295,000,000
	In US \$	2,490,000

Table 19: Institution details, NTI

6. Université Cheikh Anta Diop (UCAD)

Ecole Normale Supérieure (ENS), Dakar, Sénégal

Teacher training program for unqualified teachers to the grade of teacher of lower or upper secondary schools



Source: <http://www.diplomatie.fr/actual/evenements/senegal/carte.html>

Secondary Schools in the Regions in Sénégal		
Académie de :	No. of pupils	No. of teachers
• Dakar	125,283	2482
• Diourbel	12,710	334
• Fatick	15,350	521
• Kaolack	22,387	686
• Kolda	16,192	443
• Louga	11,480	331
• Matam	2,838	101
• St Louis	16,366	599
• Tamba	8,932	248
• Thiès	43,381	1085
• Ziguinchor	31,107	771



The director's office: from right to left: Dr Valdiodio Ndiaye, director of the ENS, Monsieur Alioune Moustapha Diouf, lecturer in Education and Monsieur Mamadou Diallo, Director of the CÆRENAD

Frederic is in his second year teaching French, history and geography in the college (lower secondary school) in Thiaroye. He has a baccalaureate and some teaching experience and was appointed by the Ministry for Education as an unqualified teacher in his school. Consequently, to date, he has been excluded from all the advantages linked with being a qualified teacher and therefore a civil servant (in Sénégal, all qualified teachers are civil servants). This is significant in terms of security of employment and salary (see *Table 18* for differentials in pay). More importantly, it means that his teaching might not be perceived as being of the required quality.

There are many unqualified teachers like Frederic. They are known as ‘vacataires’.

In 2000, the Sénégalaise government launched the vast and ambitious ‘Ten-Year Program for Education and Training’ (PDEF), which aims to ensure schooling for all by 2015. To fulfil this aim, many new schools were opened and hundreds of new, but untrained, teachers appointed on the strength of their academic qualifications which could be the baccalaureate, the licence or the maîtrise and their previous teaching experience (a minimum of 2–3 years).

Training such a vast number of professionally unqualified teachers asked for innovative methods. Because of its expertise in distance education (DE), gained from its participation in an international project led by the Télé Université de Québec, the Ministry for Education turned to the Ecole Normale Supérieure (ENS), a unit of Université Cheikh Anta Diop, to develop a DE teacher-training program for the vacataires. By choosing DE, the ministry wanted to ensure that the initial training of the vacataires would not take them out of their classroom, enabling the education of children to continue.

In 2001, the ENS launched a DE training program to enable vacataires to receive a fully recognized qualification as teachers in lower or upper secondary schools. Great attention was paid to ensuring that the content and assessment of the DE training program were totally comparable to those of the face-to-face teacher training provided by the ENS. Dr Valdiodio Ndiaye, director of the ENS, stated: ‘The ministry and the vacataires were totally agreed that we would not settle for teachers being trained on the cheap!’

In August 2001, at the beginning of the school summer holidays, 750 vacataires arrived at the ENS in Dakar for the eight weeks’ face-to-face part of their training program.



Dr Valdiodio Ndiaye, director of the ENS

The general organization of the program is in fact ‘bi-modal’. Mr Mamadou Diallo, Director of the CÆRENAD³, stated: ‘During their summer holiday, vacataires attend eight weeks’ face-to-face tuition, which marks the beginning of the course. We think these eight weeks are essential for vacataires to understand how distance learning works. It gives them a sense of belonging and enables us to teach them upfront essential parts of the course.’ This initial face-to-face period is

³ Centre d’Application, d’Etudes et de Ressources en Apprentissage à Distance = Centre for the Application, Study and Resources for Distance Training

intensive for vacataires and lecturers: 384 hours' teaching in eight weeks (eight hours a day, six days a week). The vacataires receive a general theoretical introduction in each course as well as input in psycho-pedagogy.

Frederic said: 'I have just completed my eight weeks at the ENS. We worked really hard. We received lectures and worked in groups on psycho-pedagogy, physical geography, modern geography and French and African Literature. This was the first real training I received as a teacher.'

In terms of face-to-face sessions, as well as the eight weeks at the beginning of the course, there are some workshops during the DE training, one week of exam preparation and one week of examinations at the end of the program.

After the initial eight weeks in Dakar, the vacataires go back to their regions and their teaching posts and work with the distance learning materials.



Mr Mamadou Diallo and Michèle Deane outside the CÆRENAD building

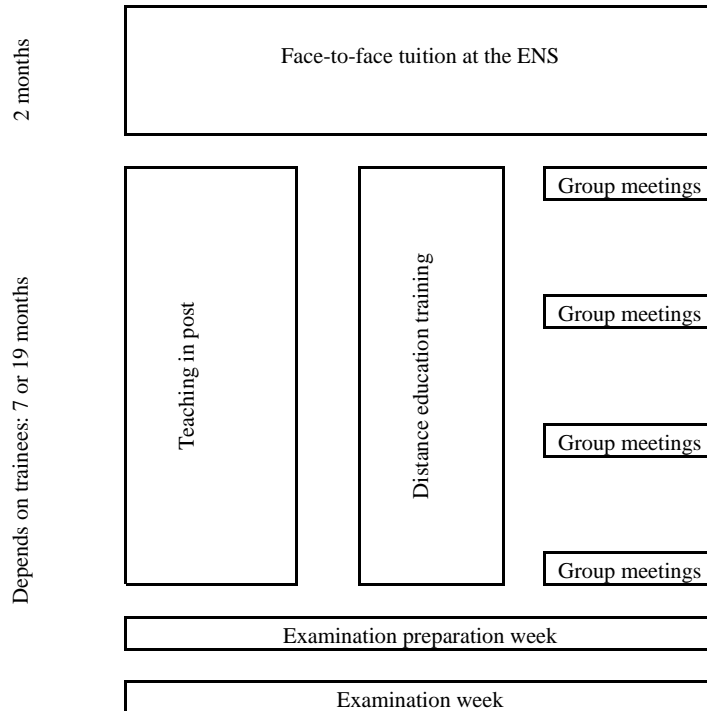


Figure 4: Course structure, UCAD

At the moment, during their DE training, the vacataires use mostly printed materials. But according to the needs of the subjects, other materials may be available: for instance, an audio cassette is available for foreign languages. For those training in life and earth sciences, a website is being developed by one of the lecturers and hosted on a free provider's site; the cost of this development does not appear to have been considered as part of the overall budget.

It is hoped that the use of new technologies for training can increase as all upper secondary schools are equipped with a computer room, and the computer facilities of lower secondary schools are expanding rapidly. In both types of school, vacataires will have access to these technologies. Currently, e-mail, fax and telephone are used by the ENS-based trainers to monitor and support the vacataires' work on their mini-dissertations. The cost of this monitoring and feedback is included under the budget head 'Communications, monitoring and feedback' which amounts to 4,000,000 francs CFA (\$7,692).

The number of vacataires trained thus far or about to be trained varies according to the sources:

Year	Number of vacataires undergoing training according to	
	The Ministry for Education	The ENS
2001-03	1,000	750
2004-06	1,300	800

Table 20: Number of vacataires to be trained, CAD

The apparent discrepancy in numbers can be explained by the fact that during the census of vacataires, their qualifications were not called for and a significant proportion of new teachers who had received a qualification from the ENS had signed up as vacataires to secure employment in regions where non-qualified teachers were hired to save money.

To the numbers shown above need to be added a (still being contended) number of vacataires who need to repeat the assessments either because they chose not to sit the final assessments or because they failed. These repeat vacataires have not been accounted for in the costs as they will not need any teaching apart from the mini-dissertation supervision and the examination preparation and marking.

There were only 150 women among the 750 vacataires of the 2001–2003 training cohort (20% of the cohort). 'This is most regrettable,' said Dr Ndiaye, 'but this reflects the fact that academic qualification is an entry requirement and, to date, the schooling of girls has not matched that of boys. A big effort is being made and the number of girls is at present 36% in state schools and 46% in private schools. It is encouraging that more women are joining the ranks of primary school teachers.' The Ministry for Education's figures show that in the year 2002/03, women represented 19.5% of the vacataires employed in schools in Sénégal⁴. Colleagues at the ENS reported that the percentage of women was higher in English and Spanish.

In 2005 second cohort of vacataires started training on the distance learning program at the ENS.

⁴ Ministère de l'Éducation, Direction de la Planification et de la Réforme de l'Éducation : Niveau national, Statistiques scolaires, Enseignement Moyen, Secondaire Général 2002/2003

The Ministry of Education wishes that 1,500 vacataires be trained per cohort, but 'it would be more reasonable to limit the number to 1,000,' stated Mr Mamadou Diallo. 'The government does wish to equip all regions but equipment is only one aspect of the problem. We need to consider the issue of the trainers: the ENS needs to train expert trainers to meet the training needs, and planning depends on the funding which is given by the minister. Although the government has unlocked significant funding, the training cannot be provided beyond the means we are given. There is a gap between wishes and reality.'

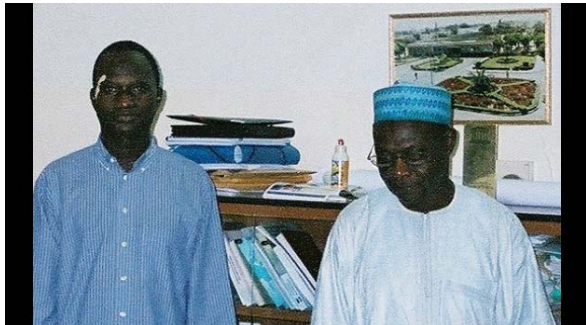
For each 2001/02 and 2002/03, the overall budget for DE training reached 81,565,000 francs CFA (\$156,856), which, as the ENS trained 750 students, represented 108,753 francs CFA (\$209) per vacataire per year. But there is a strong feeling among the central team experts that the ENS is subsidizing part of the DE training, as they are paid on the ENS central budget, and the cost of production equipment and storage rooms are all borne by the ENS.

The length of the training is linked to the vacataires' qualifications:

- The training of the vacataires bacheliers who enter the training with only their baccalaureate (bac) lasts two years. The choice of the two subjects, the knowledge of which they consolidate during the first year, is guided by the bac they have done: literary subjects for those with a literary bac and math and/or sciences for those with a science bac. As Frederic told us: 'I have a literary bac, so I am training in French, history and geography.'
- During the second year, the vacataires bacheliers will be able to specialize in one of their two subjects. At the same time, they receive professional training, which consists of the study of national syllabuses, methodology and psycho-pedagogy. These are totally meshed into the subject work.
- The 'vacataires licenciés', those with a licence (first degree), are deemed to have appropriate subject knowledge and therefore only require one year of professional training.
- As for the vacataires with a maîtrise, to earn the salary commensurate with their qualification, they need to study for six years after the bac. As the maîtrise is taken four years after the bac, although their subject knowledge is at a high level, vacataires with a maîtrise need to train for two years to meet the Sénégalaise pay structure requirements. This actually works to their advantage, as it enables them to train to teach their specialist subject in both lower and upper secondary schools. It also enables them to develop their mini-dissertation more fully, or, as in the case of history and geography, to do a second dissertation.

The DE program is guided by the team of ten experts based at the CÆRENAD offices of the ENS in Dakar. They have all received core training as trainers in distance education between 1998 and 2003. As well as the core training, individuals opted for supplementary focused training; for instance Mr Alioune Moustapha Diouf chose to develop his competences in the use of new technologies for learning, whereas Mr Ibrahima Fall elected to specialize in the training of DE trainers and has contributed greatly to increasing the number of DE lecturers in all 15 departments of the ENS.

The central team also takes care of the production of the DE materials. They receive manuscripts from face-to-face lecturers in the ENS faculties. These lecturers are given a payment for their work. These payments amount to 18,200,000 francs CFA (\$35,000), representing nearly 70% of the budget for the production and distribution of materials. Members of the CÆRENAD work



Mr Alioune Moustapha Diouf and Mr Mamadou Diallo

through all the stages of production themselves: transforming the text into DE booklets, layout and editing. The printing is also done in-house, except for very rare instances when external contractors are approached. The ENS provides storage and distribution, the cost of which is borne by the ENS, but not actually shown in the budget that is submitted to the Ministry for Education.

The majority of materials for DE are printed booklets. For all subjects, the series of booklets are organized along similar lines. A student guide provides guidance on the structure of the course and materials and provides a program/timetable of study that refers the vacataires to various parts of the course. It also contains assignments that form part of the continuous assessment.

Student's guide	All subjects	History– geography	Foreign languages	Biology and earth science
	Bachelier Year 1 Course book	Pedagogic documents file	Audio-visual materials	Website
	Bachelier Year 2 Course book	Pedagogic documents file	Audio-viisual materials	
	Licencié Course book	Pedagogic documents file	Audio-viisual materials	
	Maîtrise Year 1 Course book	Pedagogic documents file	Audio-viisual materials	
	Maîtrise Year 2 Course book	Pedagogic documents file	Audio-viisual materials	

Figure 5: Materials structure, UCAD

Vacataires in the one-year training course after licence and the maîtrise students in their first year of training have the same materials.

Although the structure is similar for all subjects, and some themes (didactics, study of practice, psycho-pedagogy) go across all of them, departments deal with the teaching of the subject as appropriate. For instance, the history–geography department offers ‘pedagogic documents file’,

whereas the foreign languages vacataires receive cassettes. However, it is likely that where audio and video cassettes are used, it would be in a face-to-face context at the regional centre workshop. All through the materials, the theory and practice are integrated.

The DE course booklets all follow the same pattern:

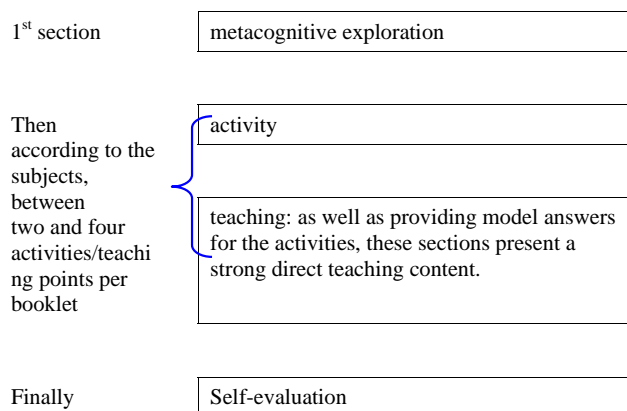


Figure 6: Organization of DE booklets, UCAD

The costing of the DE materials for one year of the 2001–03 cohort is clearly accounted:

Budget headings	Francs CFA	\$
Conception of raw materials	18,200,000	35,000
Translating into DE materials, designing and typing	1,750,000	3,365
Printing	5,280,000	10,153
Dispatch	1,000,000	1,923
Total	26,230,000	50,441

Table 21: Cost of DE materials 2001–03, UCAD

There is a range of support devices available to vacataires on the DE program in the regions.

- There are 11 continuous teacher training centres, one in each académie⁵. A 12th centre is being created in Matam. Pedagogic advisors and tutors are based at these centres. The workshops for vacataires are based in the centres and vacataires can call in as they need. As these centres are part of the national education provision, the ENS incurs no cost for using them.
- The Ministry for Education identifies and appoints the pedagogic advisors from highly skilled classroom practitioners. The advisors support all teachers in the académie, whatever their status.

⁵ basic administrative region for education

- Tutors are part-time staff and are selected by the ENS from among the pedagogic advisors. There are approximately 70 tutors who look after approximately 10 vacataires each. As tutors travel to support their students, the number of students per tutor depends on the distance to travel and the means of transport available. The tutors are trained at CÆRENAD. As the ENS cannot afford to pay the tutors out of the budget granted by the Ministry for Education, the average cost of 200,000 francs CFA (\$385) per tutor per semester is born by the ministry and not shown in the returns from the ENS.
- The central team members are fully involved in supporting the DE students. Not only do they produce the materials, they also do some of the face-to-face teaching during the first weeks of the program and in the workshops in the regional centres. They also monitor the students' work on the mini-dissertation. They are usually available to be called on the phone or visited on a Wednesday. This is budgeted under 'Communications and monitoring' at a total cost of 4,000,000 francs CFA (\$7,692).
- The ENS calculated the average monthly cost of a CÆRENAD member at 500,000 francs CFA (\$961) or per annum 6,000,000 francs CFA (\$11,540).

There are very few vacataires in and around Dakar: they tend to teach in the more rural areas. In Sénégal, teachers are allocated to posts on the basis of a points system depending on qualifications, experience and family commitments. The more points they have, the more likely they are to be posted to a school or town they have requested. It would appear that the majority try to get nearer big towns. Therefore, teachers in the country and in more remote areas tend to be unqualified, inexperienced vacataires or volunteer teachers without qualifications.

The assessment is the same for all student teachers, whether they train face-to-face or at a distance. The total comparability of face-to-face and DE student teachers is considered as paramount by all. One ENS graduate of the face-to-face training put it: 'They [the vacataires] think that there is still a real inequality. They think that they are trained for two months only.'

The assessment consists of:

- self-evaluation contained in the DE materials;
- formative assessment: in the student's guide there is at least one assignment (known as devoirs) which is marked by the tutors. The feedback is given by the tutors in writing and verbally and is accounted for in the yearly accounts. The tracking of marks is assured by the heads of department, who are lecturers elected by their peers for two years. The formative assessment processes are budgeted at 15,460,000 francs CFA (\$29,730);
- an internal examination, which consists of examinations (both written and oral) and of the viva-voce on a mini-dissertation. A mark below 6 out of 20 in this part of the exam means an automatic fail.
- an external examination, which consists of one or two lessons that are executed in the presence of a jury of three people: an inspector, a trainer from the ENS and one practitioner. For the external examination, the fail mark is 8 out of 20.

Because moving these examination juries would be very expensive, vacataires come to the ENS to teach the external examination lesson(s). They practise for one week in the examination

school prior to their demonstration lesson. They receive a small grant to assist them, but they need to find accommodation, often with friends or family. 'They are really motivated,' said Mr Diallo. 'They know that the success at the end of their training is the gateway to a civil servant status.' This is borne out by Frederic, who, when he was asked why he wanted to put himself through so much hard work, said: 'It is important to progress in life. A man who is not ambitious is not a man!'

In terms of the costing for examinations:

- the setting and design of questions is not costed and there is no external validation of the questions;
- the duplicating of the examination papers is costed to the DE budget;
- as the vacataires sit their exams with the face-to-face students, there is no extra cost for invigilation;
- the markers receive a fee per script, also included in the DE budget.

The final examinations are completed by the end of June. The results are published as soon as possible after this so that the certificates can be given out at a big graduation ceremony that takes place before the end of July. The ENS makes all the arrangements for this ceremony and meets all the linked expenses.

The cost for the elements of the examinations, award and graduation that are borne by the DE budget of the ENS amounts to 4,640,000 francs CFA (\$8,923).

The quality assurance is carried out differently according to the parts of the program that are considered.

- Currently, the quality assurance of DE materials and examination questions is implemented by the CÆRENAD lecturers who scrutinize each other's course and examination materials.
- Vacataires are required to write a report on their training and, at the end of the year, have an interview where they provide feedback on the support received, the quality of the program, whether it supported learning or not, the problems encountered and how these were resolved. The focus and evaluation seminars are costed at 6,200,000 francs CFA (\$11,923).
- A questionnaire is also sent at the end of the program asking for feedback on the documentation, its legibility, presentation and content, and on the evaluation processes and the quality of the tutorship.
- The director of the ENS takes account of the number of passes to measure and compare the performance of both the face-to-face and the DE programs. He is delighted that the results were quite similar: for the face-to-face program the success rate was 90–94% and for DE it was 85–90%.

The first run-through of the program has revealed a number of issues that are being considered by the team of experts at the ENS. They include:

- ***The size of future vacataire cohorts:*** a tension appears to have arisen between the Ministry of Education and the ENS. The ministry is suggesting a cohort of 1,500 vacataires whilst ENS wishes to limit the intake to 1,000.
- ***The production process:*** the CÆRENAD trained experts are currently designing and typesetting all DE materials. It could be argued that some of this work is not commensurate with their qualifications and expertise. Could editors and typesetters do these tasks, for instance, to free up some of the experts' time?
- ***The tracking of students:*** the discrepancy of student numbers between the Ministry for Education and the ENS and the difficulty in determining the exact number of repeats prevent both the ministry and the ENS from planning resources accurately.

Summary Tables

22A. Summary of operating budget for the training of vacataires, UCAD			
	Cost in francs CFA	Cost in US \$	% of overall cost
a) <i>Face-to-face tuition</i>	17,620,000.00	33,885.00	21.60%
Subtotal a)	17,620,000.00	33,885.00	21.60%
b) <i>Distance education training materials</i>			
* writing of raw of materials	18,200,000.00	35,000.00	22.31%
* translating into DE materials, designing and typing	1,750,000.00	3,365.00	2.15%
* printing (and storage)	5,280,000.00	10,153.00	6.47%
* dispatch	1,000,000.00	1,923.00	1.23%
Subtotal b)	26,230,000.00	50,441.00	32.16%
c) <i>Support to vacataires</i>			
* communication and monitoring of vacataires	4,000,000.00	7,692.00	4.90%
Subtotal c)	4,000,000.00	7,692.00	4.90%
d) <i>Cost linked to assessment</i>			
* correction of and feedback on assignments	15,460,000.00	29,730.00	18.95%
* examinations	4,640,000.00	8,923.00	5.69%
Subtotal d)	20,100,000.00	38,653.00	24.64%
e) <i>Quality assurance</i>	6,200,000.00	11,923.00	7.60%
Subtotal c)	6,200,000.00	11,923.00	7.60%
f) <i>Overheads (10%)</i>	7,415,000	14,260	9.10%
Grand total	81,565,000.00	156,856.00	100%

When we build on the above operating budget to include costs not directly attributed to the programme within the institution's operating budget systems (for example, full time academic staff costs), it is possible to draw out a fuller picture of the programme cost structures. This extrapolates to an overall view of the programme cost structures over the programme life:

22B. Summary projected cost structure for the training of vacataires, UCAD		
Trainee base		
Trainees enrolled to date	2,500	
Trainees currently enrolled annually	800	
Trainee graduates to date	2,100	
Total projected trainee enrolments	Above is total over programme life of 3 annual cohorts	
Presentation costs per trainee starter		
	\$	%
Learning resources	25	5
Trainee support	150	35
Assessment and quality assurance	100	20
Programme resources	175	40
Total per trainee	450	100
Presentation and development costs		
Total per trainee starter	600	
Total per trainee per year	400	
Total per trainee graduate	700	
Fixed and variable costs		
	\$	%
Fixed costs	400	65
Variable costs	200	35

Table 22: Summary of budget for the training of vacataires, UCAD

Comparative salary table		
Average annual salary of	francs CFA	\$
a C/ERANAD member	6,000,000.00	11,538.00
a part-time tutor (200,000.00 francs CFA by semester paid directly by the Ministry for Education)	400,000.00	769.00
a beginning teacher* ¹ according to academic qualifications		
▪ with a baccalaureate	1,233,276.00	2,372.00
▪ with a licence	1,524,252.00	2,931.00
▪ with a maitrise	1,655,592.00	3,184.00
a vacataire* ²	894,564.00	1,720.00
<p>* All the data about categories marked with * has been found on the Sénégal Ministry for Education website (http://www.education.gouv.sn/personnels/droitremuneration.html accessed 19/02/05).</p> <p>*¹ We selected the 'professeur contractuel' category, which is the category vacataires are appointed to.</p> <p>*² This can only be estimation. Vacataires are paid for the hours they teach. According to the Sénégal Ministry for National Education website, vacataires are paid 1,506 francs CFA per hour for a national average contact time of 18 hours per week. For the purpose of the calculation above, the month is considered to be the equivalent of 33 18-hour weeks.</p>		

Table 23: Comparative salary table, UCAD

1. The University of Fort Hare, Eastern Cape, South Africa

Primary BEd Distance Education Program

In-service training provision for primary school teachers



Source: http://www.places.co.za/maps/easter_cape_map.html

Regional centres are located at:

Nyathi	Umtata
Bisho	Bizana
Flagstaff	Kokstad Umzimkulu
Queenstown	East London
Butterworth	Lusikisiki
Alice	Maluti
Mt Frere	
Sterkspruit	



Fort Hare student teachers at work

'It was a program for and of its time ...' 'It was developed when policy was not yet fixed and there was time and space for dreaming and doing what you always wanted to do ...' 'We wanted to speak into the Eastern Cape context: the rural, underdeveloped, neglected corners of the province. To take this opportunity to transform people's lives ...' 'That is what it came down to in the long run. (extract from conversation between Program Directors 1997–2001 and 2002–present)

In May 2004, the University of Fort Hare's Primary BEd Distance Education Program (Foundation and Intermediate phase) were overall winners in the National Association of Distance Education Organizations in South Africa's (NADEOSA) course awards. What has made this distance education program so distinctive, attracting international, as well as national, acclaim?



Firstly, the context in which the program was initially conceived and developed was unique. This distance education program (DEP) was originally scoped in the new democracy of 1994 as a 'big idea' that would offer a range of primary, secondary and Master's teacher education programs to one of the most rural and hitherto marginalized communities of South Africa. Nhlanganiso Dladla, the first director, saw the Fort Hare program as a major contribution to the social justice agenda.

The original project plan gained the wide support of teacher unions, the Ministry of Education, and NGOs. Although the ideals of the project broadly matched government policy of the time, it took much perseverance to align these robustly with the new policy framework, as well as to find secure funding for program start-up, locating a program team with the necessary expertise and the scoping of a more realistic and streamlined program. As it emerged, this was to become the first teacher education program to respond to South Africa's new Higher Education Policy document.

Secondly, the DEP is unique in its threefold aim to move beyond the narrow limits of a teacher training program, in order to consider schools as a whole as learning communities:

- to upgrade the professional qualifications of Eastern Cape primary school teachers;
- to transform school and classroom practices in line with the new government agenda;
- to introduce the best international practice in the field of teacher education into the Eastern Cape.

The imperative to provide qualified teachers was huge at the initial scoping phase of the program, given that 40% of the 60,000 teachers in the Eastern Cape were unqualified. However, this did not deter the program planners from considering the kind of wider impact that such a

program might ideally have – not only on individual teachers, but also on schools and communities.

Thirdly, the DEP is unique in the attention paid to the quality of the course materials and, alongside this, the necessary high level of funding that was allocated to the first two years of intensive course production. The program’s full-time course team has always consisted of a director and three academics. In the early days, however, this group worked almost solely as a close-knit writing team, priding themselves on doing not only the authoring, but graphics, design and editing. The team drew on international teacher education models, while paying attention to the need to reflect the indigenous context: ‘It was costly in terms of time, but it set a gold standard in terms of course production.’

In 2003, 1,124 teacher-learners participated in the program, spread over four-year cohorts as follows:

- First year 176
- Second year 179
- Third year 415
- Fourth year 354

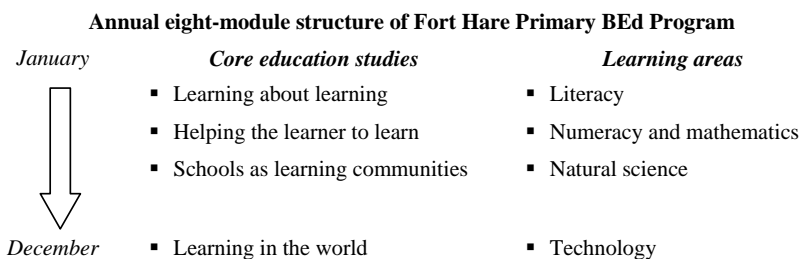


Figure 7: The eight-module structure, Fort Hare

The program relies on two established resources available to open and distance learning programs locally – text and local tutor support. The tutors, or abakhwezeli, provide a key structure for the program. Organized through regional centres across the province, they provide tutorials closely linked to the text materials and school activities and visits. This arrangement is only possible through a partnership between Fort Hare University and the Eastern Cape Education Department.

The Primary BEd program comprises eight semesters. Each semester comprises two courses, presented through eight imithamo (each umthamo is a separately printed booklet of approximately 40 pages) in ‘bite-size’ chunks of approximately 40 hours of notional learning time (see *Table 25*).

Of the 40 hours’ study time, approximately three are spent in face-to-face discussion on three Saturday mornings and the other 37 are spent in individual self-study and classroom application, built around a key activity (requiring at least 10 hours to complete). A typical Saturday morning

contact session (of which there are 20 during the course of the two-semester year) involves discussion of three imithamo: one being concluded (for example, Umthamo 11: Natural sciences: What's happening here?); one being monitored (for example, Umthamo 12: Creating a learner-centred environment); one being introduced (for example, Umthamo 13: Problem solving and investigating).

Saturday morning contact sessions are supported by abakhwezeli. The rationale for the choice of umkwezeli is explained in terms of someone whose 'job was to keep the fire burning just right so that the food in the pot would cook well'. The abakhwezeli are thus not supposed to use contact sessions to teach the content of the program. Rather, they play the role of facilitating discussion on matters arising in the classroom, as well as progress on and implications of the issues explored in the printed material. The abakhwezeli have a key role to play in motivating teacher-learners in their studies – that is, in 'keeping the fire burning'.

The majority of abakhwezeli are teachers or principals from the local area. All abakhwezeli receive a stipend of R500 (\$91) per Saturday contact session of three hours. In practice, many abakhwezeli work considerably more hours on the Primary BEd work than they are paid for, as the stipend does not cover time spent in preparation, in additional support, in feedback on assessment of assignments, on practice portfolio sessions and so on. There are clearly other motivating factors at play.

Although curriculum development and curriculum support materials remain largely centralized, the learner support work of abakhwezeli is increasingly coordinated in a decentralized way through regional coordinators (positions that were first created in May 2000). The regional coordinator's role fulfils three broad functions:

- academic support to abakhwezeli and teacher-learners;
- administrative functions of record keeping, reporting on a monthly basis at a central progress meeting, recruitment and induction, developing plans of action, and negotiating catch-up sessions for any groups falling behind others for whatever reason;
- logistical support to ensure that materials are delivered correctly and on time, and that centres have the abakhwezeli they need to support the teacher-learners enrolled.

The regional coordinator is the first line of communication for centre coordinators (see below) who are encountering problems, and plays a monitoring role in this regard. It is envisaged that regions will need to become increasingly autonomous as the program grows.

The link between regional coordinators, abakhwezeli and teacher-learners are centre coordinators. They are based at Nyathi, Butterworth, Umtata, East London, Bisho, Alice, Bizana, Lusikisiki, Flagstaff, Mt Frere, Kokstad Umzimkulu, Maluti, Queenstown and Sterkspruit. Some centre coordinators coordinate more than one centre and/or double up as regional coordinators.

Centre coordinators play a similar role to regional coordinators, but on a smaller scale. Key aspects of the role include:

- ensuring that the right imithamo and abakhwezeli are in place at the right time;

- compiling a monthly report of activities for the regional coordinator;
- checking that abakhwezeli mark hand-in key activities on time, fairly and accurately;
- ad hoc checking of non-hand-in key activities as well as abakhwezeli journals.

Monitoring of the work performance of abakhwezeli is intensive for new recruits, but becomes more ad hoc as they grow in experience. The ‘centres’ themselves comprise school classrooms and government offices, which are ‘borrowed’ freely for the duration of the contact session.

In reviewing the cost basis for the course, it appears that the breakdown of costs to key areas of activity is as set out below:

Core team	65%
Learning resources	5%
Student support	20%
Assessment	5%
QA and evaluation	5%

Table 24: Percentage costs of key activities, Fort Hare

Importantly, the program attracted significant external investment funding of R1M per year from 1998 to 2002 in its development phase.

By making use of existing facilities, mobilizing the support of community members who give very generously of their time and expertise, and entering into a partnership agreement with the Provincial Department of Education, the University of Fort Hare manages to offer a considerable and varied degree of contact-based support to its teacher-learners, without needing to raise fees to unavoidable levels. The Primary BEd fee remained R3,000 (\$545) per year throughout the program, until 2004, when it rose to R3,200 (\$580) i.e. R12,800 (\$2,300) for the program. Government subsidy is the major funding source for the ongoing operation of the program at R1,500 (\$272) input subsidy per year and R16,000 (\$2912) output subsidy – amounting to R22,000 (\$4,000) for a successful teacher-learner. Therefore, government subsidy accounts for almost 2/3 of the total funding per student

A SAIDE team that carried out a Kellogg’s Foundation funded research study of the project in 2002 commented specifically on the following aspects of the program:

- It is a mixed-mode program that has appeared to find a way of meeting the imperatives of access as well as quality.
- It has retained quality support and assessment whilst reaching significant numbers of teacher-learners.
- Materials are strongly orientated to the local context.
- The program has selected, trained and supported a cadre of local tutors in a dispersed network of learning centres, close to where teachers live and work. It is this dimension that has enabled the program to go successfully to scale.

The policy context has shifted significantly since 1994. Many DEPs of questionable value were developed to meet the urgent needs of teacher upgrading at this time, without the attention to quality of the DEP. The widespread discrediting of such programs has resulted in new government policies that will mean few government subsidies for DEPs from 2005, with the exception of those delivered by a single government mandated provider (UNISA). Whilst this impacts on the future of the DEP, the Primary BEd program has in any case broadly achieved its original aim, since there are now relatively few unqualified teachers in the province. This opens up new horizons. The lessons learned from the DEP's school-based practices, together with the exemplary resources, will be used to develop a new, school-based pre-service program. The existing DEP will be transposed to provide campus support, quality materials and thoughtful school-based activities for the, now statutory, 'teacher learnerships'. Such school-based activities have perhaps been the greatest hallmark of the program and those within the imithamo 'Schools as learning communities' are the ones most quoted by teachers as having made a difference to their schools and communities.

Elias, currently a second-year teacher-learner in Tyutyu Primary School, Bisho, told us he is one of eight teachers on the staff who have gone through the program at different stages, supported by an abakwazeli also on the staff. The school's mission statement, made jointly by parents, governors and staff, as well as the creation of a vegetable garden by the pupils, were both activities carried out as part of his course.

Currently, Elias – who was a builder before he became a teacher – is using redundant corrugated iron from another building and, along with parents and children, building a new classroom during the summer holidays, as a response to his studies. Many testimonies of teachers echo Elias's thought on the program as 'helping me to see myself being able to make a difference in people's lives. I have been able to be an advocate of change by improving the learners' lives for the better. I have been able to gain strength and use all available resources, together with other teacher-learners. Although it has not always been easy to introduce change, the support I got from my other colleagues and my fellow teacher-learners gave me strength to keep going.'



The implementation of the program has revealed a number of educational planning and cost issues, which are actively being debated within Fort Hare. These include:

- Resource-intensive program support, for example:
 - withdrawal of ESSOs (education support staff and officers) needs to be accommodated without causing student progression and success to fall – an essential element of the program funding;

- extensive centre network – how sustainable is this in the medium to long term?
- matching academic and administration systems so that student tracking can be achieved more formally;
- the balance of resources between the core program team and direct student support.

Fort Hare could look at the available cost options around each of these issues. For example:

- increasing student support could be paid for by additional students succeeding. For example, the direct salary cost of a half-time support officer is equivalent to the government output subsidy of an additional seven students completing and succeeding on the program;
- reducing centre support costs. For example, a reduction in regional centres from 21 to 15 could realize annual savings in direct staff costs of some R470,000 (\$78,000).

Distance Education Project Core Education Studies Course, UFH: curriculum organization				
Organizing themes	Learners & learning	Helping learners learn	School as learning community	Learning in the world
Year 1 Focus	What is learning	Learner-centred classrooms	School as learning community	Role of education
Semester 1	Thinking about learning, incl. learning at home, constructivism	Using group work to aid learning. Group work, activity centres, project work	Concept of school as learning community, characteristics of single-grade, multi-grade schools, large classes	Role and aim of education: advantages and disadvantages of schooling as a way to education
Semester 2	Exploring teachers' theories about learning incl. various theorists	The teacher as facilitator and mediator <i>Profiling the learner</i>	The self-managing school and community, empowering schools to become self-managing	Understanding education and change in SA: pre-colonial, apartheid education and resistance, to date
Year 2 Focus	Role of language and thinking	Outcomes-based education (OBE)	Educational policies	Curriculum 2005
Semester 1	Language and thinking incl. metacognition	Understanding change: OBE, teacher as change agent, continuous assessment <i>Evaluating learners' achievements</i>	Educational policies: at school level, classroom curriculum	Curriculum 2005: local imperatives and world trends, purposes of education (work, globalization)
Semester 2	Exploring language and thought incl. different types of learner talk; different ways of thinking	OBE approaches and learning materials. <i>Identifying available learning and teaching resources</i>	Educational policies: at national level. <i>Evaluating teaching programs</i>	Curriculum development, policy and programs
Year 3 Focus	Human development	Understanding and responding to learners' development	Effective management in schools	Hidden curriculum
Semester 1	Physical and cognitive aspects	The teacher as researcher and evaluator <i>Evaluating the effectiveness of teaching</i>	Physical arrangement of classes, classroom preparation, democratizing the classroom, stress, isolation	Hidden curriculum and rules and regulations of teachers and schools

Semester 2	Social, moral and emotional aspects	Holistic teaching (incl. whole language, theme teaching), all aspects of learners' development <i>Action research to improve classroom practice</i>	Scheming, lesson planning and time-tabling	Hidden curriculum and anti-bias education: race, gender, disability
Year 4 Focus	Learners and diversity	Responding to diversity	The school and the community	Relevance of education
Semester 1	How we can promote or hinder learning, different ways of learning, catering for individual needs, independent and peer learning	The teacher as motivator: encouraging positive behavior of pupils, conflict management	Educational Policies: community input, educational resources within the community <i>Identifying available learning and teaching resources</i>	Cultural context of education, relevance, language and critical literacies
Semester 2	Exploring learning problems and the challenges these present	Using the social context as a resource, using, making and adapting other resources for learning aids	Contribution of the school to the community, community and teacher aides, Parents-Teachers Association, reporting to parents	<i>Major research project</i>

Table 25: Detailed model of curriculum organization of program, University of Fort Hare

Summary Tables

26A. Summary of annual indicative operating costings for the BEd Distance Education Program, Fort Hare			
Headings	Cost in Rand	Cost in US \$	% of overall cost
a) Central Program Team			
* central academic team	1,079,370.00	179,000.00	16.86%
* regional team	1,326,600.00	220,000.00	20.73%
* administrative support team	1,964,574.00	325,800.00	30.70%
Subtotal a)	4,370,544.00	724,800.00	68.29%
b) Distance education training materials			
	311,148	51,600	4.86%
c) Support to students			
* tutor training	271,350.00	45,000.00	4.24%
* face-to-face contact	886,410.00	147,000.00	13.85%
Subtotal c)	1,157,760.00	192,000.00	18.09%
d) Cost linked to assessment			
* assignments	108,540.00	18,000.00	1.70%
* portfolios	108,540.00	18,000.00	1.70%
* affirmation	114,570.00	19,000.00	1.79%
Subtotal d)	331,650.00	55,000.00	5.18%
e) Quality assurance			
	229,140.00	38,000.00	3.58%
Grand total	6,400,242.00	1,061,400.00	100.00%

When we build on the above operating budget to include costs not directly attributed to the programme within the institution's operating budget systems (for example, costs of local district support made available during early years of the programme's operation), it is possible to draw out a fuller picture of the programme cost structures. This extrapolates to an overall view of the programme cost structures over the programme life:

26B. Summary projected cost structure for the BEd Distance Education Program, Fort Hare		
Trainee base		
Trainees enrolled to date	1,950	
Trainees currently enrolled annually	400	
Trainee graduates to date	1,500	
Total projected trainee enrolments	Above is total over programme life of 5 annual cohorts	
Presentation costs per trainee starter	\$	%
Learning resources	250	5
Trainee support	500	10
Assessment and quality assurance	1,250	25
Programme resources	3,200	60
Total per trainee	5,200	100
Presentation and development costs	\$	
Total per trainee starter	5,700	
Total per trainee per year	1,400	
Total per trainee graduate	7,600	
Fixed and variable costs per trainee starter	\$	%
Fixed costs	4,800	85
Variable costs	900	15

Table 26: Summary of annual indicative costings for the BEd Distance Education Program, Fort Hare

Comparative salary table		
	Rand	\$
A lecturer's average annual salary	140,000.00	23,217.00
A course tutor's honoraria (per three-hour contact session)	500.00	83.00

Table 27: Comparative salary table, Fort Hare

8. Open University of Tanzania, Dar-es-Salaam, Tanzania

BSc with Education

In-service training provision for secondary school science teachers



Source: <http://worldatlas.com/webimage/countrys/africa/ciamaps/tz.htm>



It has been hard work. I would finish my work at 3.30 p.m. and then every evening work for four or five hours on my Open University studies. My husband helped in taking on some of the household responsibilities. But not all the women on the course were so lucky. I really enjoyed the practical weeks in Morogoro but three or four a year was very demanding.

Agnes Msaka, a nurse tutor at the Muhimbili School of Nursing in Dar-es-Salaam, was speaking just before taking her final examination for the BSc (Education) at the Open University of Tanzania (OUT). She was one of a thousand students enrolled on this program, which involved study in two sciences, education modules and a series of educational study visits. 'I would never have been able to obtain a degree without OUT,' she said.

The OUT enrolled its first students in 1994. Julius Nyerere, the first Tanzanian president, had been keen to establish a university fulfilling the same sort of purpose as the OU in the UK, but it only came to fruition after his presidency. The BSc (Education) is one of a range of undergraduate education programs offered within the Faculty of Science, Technology and Environmental Studies. It caters primarily for teachers who have a Diploma level qualification and wish to upgrade their qualification to Bachelor level.

*Secondary education in Tanzania is now expanding following the increased enrolment at primary level and there is a particular need for well-qualified teachers of mathematics and science. Most of the students already have some sort of qualification, at Diploma level, for example, but because conventional universities do not have the room to admit all qualified candidates, secondary school leavers are turning to OUT. Currently around 6% of students fall into this category but we see numbers growing.
(Dr Emmanuel Babyegeya, Dean of Education)*

The OUT is working in a context where aspirations for higher education are high and growing, but where existing provision is unable to meet the demand. This is particularly true of teacher education where the pool of secondary teachers needs to expand significantly over the coming decade. The OUT is, therefore, fulfilling an important role in realizing national development targets.

*When we created OUT there were some in the conventional university sector who were sceptical of open and distance learning. We had to make the courses rigorous and comparable, if not better than say those at the University of Dar-es-Salaam. We may have made a few mistakes then, but all our courses can be reviewed and there are a number of areas where we are exploring change.
(Professor Donatus Komba, who recently retired as deputy vice-chancellor)*

Current enrolments and budget of the university are shown in *Table 35*.

The focus in this cost study is the BSc (Education), which is made up of 48 units of study. Each of these is expected to take a student 45 hours to study. This is not an exact figure but gives an indication to unit authors and students of the extent of work expected. The units are classified at three levels – the 100 series, 200 series and 300 series – and students have to take a certain

number at each level. The BSc (Education) students must take 32 science units and 16 education units. *Table 29* gives an example of what a study program could look like for a student taking biology and chemistry. To obtain the BSc (Education) and to prepare them for teaching at secondary level, students must make a selection from an agreed combination list.

The unit structure is flexible and students can progress through the course at their own pace. One student has managed to do a BSc in mathematics in three years but in science this was almost impossible as students have to do two to four weeks of practical work per year for at least three years. Students studying biology and chemistry have to do practical work in Morogoro for biology and the University of Dar-es-Salaam for chemistry. There are also two periods of teaching practice, which are normally four assessed visits to the school they work in. The practical and teaching practice assessments are counted as the equivalent of two units respectively. Each unit has an A4 self-study booklet, usually produced by OUT or consultant staff. There are no specific unit tutors, but students could ask for help through the 23 OUT regional centres across the country. Staff salaries make up a significant proportion of the budget. *Table 31* shows current salary levels for full-time and part-time staff.

The student fee for each year is currently 155,000 Tanzanian shillings (\$148). Based on a completion time of six years, this level of payment, 930,000 shillings (\$888) overall for a 48-unit course, proved very demanding for some students although it is heavily subsidized by central government funding, which represents some 77% of total program income. The cost of producing each unit is estimated at 3,750,000 shillings (\$3,600) and, in presentation, to include assessment and support, the total direct and indirect cost per student per year is 420,000 shillings (\$400).

Overall, however, the figure for the BSc (Education) is much higher for science courses because of the practical requirements. A practical science week, which involves the hire of buildings, staff and equipment, as well as costs of consumables, works out at 33% of the overall budget of the Faculty of Science, Technology and Environmental Science. (Mr Kiluma, Head of Planning)

The assessment system is rigorous and demanding of students and staff alike. Each unit has a final examination, which accounts for 60% of the final grade, two timed invigilated tests (25%) and two assignments (15%). In theory, the timed tests and assignments should be marked and returned to students prior to the examination, but the time lags in processing assignments means that only one timed test and one assignment reaches the student prior to their sitting the examination. Students can, if they wish, delay to a later year the completion of any of the assessed components and many do.

In reviewing the cost basis for the course, the breakdown of direct costs to key areas of activity is as set out below:

Core team	30%
Learning resources	10%
Student support – practicals	15%
Student support – other	0%
Assessment – units	40%
Assessment – teaching practice	3%
QA & evaluation	2%

Table 28: Percentage costs of key areas of activity, OUT (more detailed information is provided in Table 29)

The time period within which a student must complete their studies is eight years. Some, therefore, have periods of inaction and OUT regularly reviews what it terms active, partially active, and inactive students.

Overall, 20% of students are women. Since initiation in 1994, the course has graduated 26 BSc (Education) students and this number is expected to increase significantly as larger cohorts of students complete their studies.

The first phase implementation of the program has revealed a number of issues that are actively being debated within OUT. Each raises a mix of educational, planning and cost issues. These include:

- **The possibility of introducing a system to accredit prior learning.** Currently, a BSc (Education) does a full degree course whatever their prior qualifications, and this is a stipulation of the national Higher Education Accreditation Council. Some recognition of, for example, Diploma level study would reduce the costs to student and university and increase the throughput of graduates: however, as some faculty staff argue, it might put overall quality and students at risk.
- **Reducing the number of units.** Faculties are currently being asked to review this. If units could be combined, then significant cost savings could be made and the assessment load on students could be reduced. Not everyone is happy to make this move. However, as one faculty member said, ‘OUT is providing the same sort of unit offer as a conventional campus university, but our logistics are very different. In a campus university, the student walks across the lawn to study one unit after another. We have to set up a whole administrative system to do that. It would make much more sense to group the units into larger chunks. Look anyway how some units have the same title but are labeled I, II or III.’ Some experimentation is taking place and the Faculty of Law is offering three-unit study blocks in its program.
- **The weight of assessment.** A great deal is expected of students and, while addressing the critics of ODL who worry about quality, the present arrangements also consume a large part of the overall budget and time: ‘Why, for example, is it necessary to have examinations and timed tests?’ said one faculty member.

- ***The nature of support.*** Currently, no direct teaching is provided alongside the study texts: occasional support sessions are offered, on demand, in the regions and these are highly popular. Self-help groups are being set up, particularly by women on the course. Perhaps, however, some have suggested, the level of resources going into assessment and practicals could be adjusted to provide a greater level of support.

OUT could look at the available cost options around each of these issues. For example:

- if the time-invigilated tests were removed from the assessment model, \$32,000 would be saved, which could support 1,800 tutor support sessions;
- if the units were made twice the size, but with the same assessment model of one exam, two timed tests and their assignments, the savings would be \$38,000, which could provide 2,200 tutor support sessions, or alternatively 2.6 fte extra members of central staff, or a combination of the two;
- if the number of science practical weeks were halved, the saving would be \$15,000.

Structure of BSc (Education) Course, OUT			
Combination lists for a student taking on BSc (Education) Example: Biology with Education			
			<i>Units</i>
EDUCATION			
PART ONE SERIES			
<i>Year 1</i>			
OED 101:	History of Education	(core)	1
OED 102:	Philosophy of Education	(core)	1
OED 103:	General Psychology	(core)	1
<i>Year 2</i>			
OED 104:	Learning Attitudes and Motivation	(core)	1
OED 105:	Philosophy of Teaching and General Methods	(core)	1
OED 106:	Environmental Education	(core)	1
OED 107:	Sociology of Education	(core)	1
OED 212:	Teaching Practice	(core)	Cumulative
PART TWO SERIES			
<i>Year 3</i>			
OED 201:	Curriculum Development	(core)	1
OED 202:	Educational Media	(core)	1
And any two of the following:			
OED203:	Mathematics Methods	(core)	1
OED204:	History Methods	(core)	1
OED205:	Philosophy and Religious Studies Methods	(core)	1
OED206:	English Language Methods	(core)	1
OED207:	Literature in English Methods	(core)	1
OED208:	Lugha ya Kiswahili Methods	(core)	1
OED209:	Business Studies Methods	(core)	1
OED210:	Economics Methods	(core)	1
OED211:	Geography Methods	(core)	1
OED212:	Teaching Practice (by assessment)	(core)	(Commutative)
OED218:	Physics Methods	(core)	1
OED219:	Chemistry Methods	(core)	1
OED220:	Biology Methods	(core)	1
OED221:	Home Economics Methods	(core)	1

Year 4			
OED213:	Educational Planning and Administration	(core)	1
OED214:	Test and Measurements	(core)	1
And any one of the following:			
OED215:	Educational Statistics	(elective)	1
OED216:	Comparative Education	(elective)	1
OED217:	Contemporary Issues in Education	(elective)	1
PART THREE SERIES			
Year 5			
OED212:	Teaching Practice	(core)	2
OED301:	Child Development and Personality	(elective)	1
OED302:	Introduction to Special Education	(core)	1
OED303:	Introduction to Educational Research	(elective)	1
OED304:	Economics of Education	(elective)	1
Year 6			
OED305:	Principles of Guidance and Counselling	(core)	1
OED306:	Adult Education and National Development	(elective)	1
BIOLOGY			
PART ONE SERIES			
Years 1 & 2			
OBT 101:	Plant Kingdom	(core)	1
OZL 101:	Invertebrates	(core)	1
OBL 101:	Biological Techniques	(core)	1
OZL 102:	Vertebrates	(core)	1
OBT 102:	Plant Structure and Development	(core)	1
OBL 102:	Cell Biology	(core)	1
PART TWO SERIES			
Years 3 & 4			
OBL 201:	Fundamentals of Ecology	(core)	1
OBL 202:	Genetics	(core)	1
OBL 203:	Microbiology	(elective)	1
OBL 204:	Soil Science	(elective)	1
OBT 103:	Plant Biochemistry	(core)	1

OBT 201:	Plant Morphogenesis and Developmental Anatomy	(elective)	1
OBT 301:	Plant Ecology	(elective)	1
OBT302:	Mycology	(elective)	1
OZL 204:	Histology and Cytology	(elective)	1
OZL 201:	Animal Physiology	(core)	1
OZL 203:	Endocrinology	(elective)	1
OZL 205:	Developmental Biology	(elective)	1
OZL 206:	Arthropod Biology	(elective)	1
Years 5 & 6			
OBT 203:	Plant Anatomy	(elective)	1
OZL 207:	Mammalogy	(elective)	1
OZL208:	Immunology	(elective)	1
OBL 301:	Taxonomy	(core)	1
OBL 302:	Biostatistics	(elective)	1
OZL 303:	Entomology	(elective)	1
OBL 303:	Molecular and Microbial Genetics	(elective)	1
OBL 304:	Aquatic Ecology	(elective)	1
OZL 305:	Parasitology	(elective)	1
OBL 306:	Evolutionary Biology	(elective)	1
OBL 307:	History and Philosophy of Biology	(elective)	1
OBL 308:	Fish and Fisheries Biology	(elective)	1
OBT 308:	Plant Pathology	(elective)	1
OZL 310:	Animal Behaviour	(elective)	1
OBT 305:	Plant Metabolism	(elective)	1
OBL 350:	Biology Practicals	(core)	1

Table 29: Structure of BSc (Education) Course, OUT

Summary Tables

30A. Summary of annual operating indicative direct costings for BSc with Education, OUT			
	Cost in TShs	Cost in US \$	% of overall cost
a) <i>Central program team</i>	59,146,500.00	56,330.00	29.90%
b) <i>Distance education training materials</i>	19,341,000.00	18,420.00	9.78%
c) <i>Support to students</i>			
* Science practicals	29,599,500.00	28,190.00	14.96%
* Face-to-face contacts	701,400.00	668.00	0.35%
Subtotal c)	30,300,900.00	28,858.00	15.32%
d) <i>Costs linked to assessment ^{*1}</i>			
* Assessment and examinations	80,796,450.00	76,949.00	40.84%
* Teaching practice	5,141,850.00	4,897.00	2.60%
Subtotal d)	85,938,300.00	81,846.00	43.44%
e) <i>Quality assurance</i>	3,113,250.00	2,965.00	1.57%
Grand total	197,839,950.00	188,419.00	100.00%
Note ^{*1} : In practice, assessment costs are currently constrained significantly within this by central academic staff taking on a much greater role in assessment marking.			

When we build on the above operating budget to review costs within the institution's operating budget systems (for example, costs of central academic marking), it is possible to draw out a fuller picture of the programme cost structures. This extrapolates to an overall view of the programme cost structures over the programme life:

30B. Summary projected cost structure for BSc with Education, OUT		
Trainee base		
Trainees enrolled to date	800	
Trainees currently enrolled annually	100	
Trainee graduates to date	26	
Total projected trainee enrolments	1,600 over programme life of 16 annual cohorts	
Presentation costs per trainee starter		
	\$	%
Learning resources	150	5
Trainee support	300	10
Assessment and quality assurance	1,050	35
Programme resources	1,500	50
Total per trainee	3,000	100
Presentation and development costs		
	\$	
Total per trainee starter	3,300	
Total per trainee per year	400	
Total per trainee graduate	8,300	
Fixed and variable costs per trainee starter		
	\$	%
Fixed costs	2,000	60
Variable costs	1,300	40

Table 30: Summary of annual indicative direct costings for BSc with Education, OUT

Comparative salary table		
	T Shs	\$
• A lecturer's average annual salary	10,500,000.00	10,000.00
• A part-time tutor's honoraria (per day)	14,700.00	14.00

Table 31: Comparative salary table, OUT

Institution details		
Total student numbers as at January 2004 (all DL)	16,316	
Total staff numbers as at January 2004	198	
Total annual budget for 2003–4	In T Shs	3,922,053,534.00
	In US \$	3,735,000.00

Table 32: Institution details, OUT

9. Summary of Findings

This section summarizes the key findings from the studies conducted at the five institutions.

Program Size and Content

The number of trainees enrolled in the programs each year varies from 100 trainees in Tanzania to approximately 24,000 in Nigeria. The length of the programs also varies among the five institutions, with the average duration being four years (with the exception of Senegal's one or two year program for 'vacataires'⁶). All programs share the fact that they were developed for the in-service training of unqualified teachers, either at primary or secondary level. The main training material for ODL programs in all five models is printed study texts, and, in general, the program is delivered by a combination of printed texts, face to face tutorials and teaching experience. The programs also include workshops at ODL headquarters or regional centers. In the case of Senegal, an initial face to face 8 week course is required, and several workshops are held via Distance Learning at the regional centers. In South Africa, there are group learning sessions at the regional center, and trainees are required to spend three in every forty hours of their course at such sessions. The five institutions also provide trainees with learner support. Some have a central coordinating team and all have regional centers where trainees can receive support from tutors or advisors. The coordinators who manage these centers are responsible for liaising between the center team, tutors and trainees. Under close scrutiny from traditionalists, the institutions have rigorously assessed trainees through assignments, tests, and final examinations.

Budget Allocation and Cost Structure

With regard with budget allocation, all institutions allocate across training materials, student support, assessment, and quality assurance. In the planning stages of the programs, the institutions each plan for the provision of specific trainee materials, determine learner support services and decide on the frequency of assessment. Some institutions, such as NTI of Nigeria and ENS of Senegal, allocate more money to developing training materials than to learner support. On the other hand, other institutions like UFH of South Africa prefer to allocate more funds to learner support. Table 1 compares the five models with regard to budget distribution for training materials, learner support, assessment, and quality assurance.

⁶ Unqualified teachers

Table 1 Budget allocation

	Ghana (Institution of Education in Winneba, UEW)	Nigeria (National Teachers' Institute, NTI)	Senegal (Ecole- Normale Superieure, ENS)	South Africa (Institution of Fort Hare, UFH)	Tanzania (Open Institution of Tanzania, OUT)
Target audience	In-service training primarily school teachers	In-service training basic grade & unqualified primary school teachers	In-service training lower or upper secondary school teachers called 'vacataires'	In-service training primary school teachers	In-service training secondary school science teachers
Annual enrolment	1,800	24,000	800	400	100
Duration and level	3yrs: diploma or 5 yr BEd, BE	4yrs: one double major or two single majors	1 yr license or 2yr maitrise	4yrs	6yrs BSC (Edu.)
Modes of study	Self-study, F2F workshops, & F2F tutorials with residential schools	Self-study, F2F workshops, F2F tutorials & teaching practice	Initial F2F 8 week course, Self-study, F2F tutorials with residential schools, & teaching practice	Self-study, F2F discussions, classroom applications & F2F tutorials	Self-study, practical work, & teaching practice
Materials	Printed study texts	Printed study texts & audio-visual materials	Printed study texts, audio-visual, & website	Printed study texts	Printed study texts

Budget for materials development	\$634,617 (58.86% of total operating budget) ⁷	\$997,186 (40.17% of total operating budget)	\$50,441 (32.16% of total operating budget)	\$51,600 (4.86 % of total operating budget)	\$18,420 (9.78 % of total operating budget)
Learning support	(1) UWE: Central team 26 staff (14 lecturers/12 supporting staff) (2) 12 regional centers: regional coordinators, tutors	(1) Headquarters: FOSS, but no central team (2) Zonal office: coordinators (3) State office or field centers: coordinators, tutors	(1) ENS: central team 10 staff (2) Regional training centers: pedagogic advisors, tutors	(1) UFH: central coordinators (2) regional centers: abakhwezali (tutors), regional coordinators	(1) OUT (2) regional centers
Budget for learning support	\$359,369 (33.33% of total operating budget)	\$704,780 (28.39% of total operating budget)	\$7,692 (4.90% of total operating budget)	\$192,000 (18.09% of total operating budget)	\$28,858 (15.32% of total operating budget)
Assessment	assignments and final examination	assignments, tests, and final examination	internal and external examinations, self-evaluation	assignments and school-based tasks	assignments, tests and final examination for each unit
Budget for assessment	N/A	\$594,225 (23.94% of total operating budget)	\$38,653 (24.64% of total operating budget)	\$55,000 (5.18% of total operating budget)	\$81,846 (43.44% of total operating budget)
Quality Assurance	(1) QA unit (2) evaluation of the course in each department on an annual basis (3) trainees will be invited for user feedback at the end of their course	N/A	(1) a report on training is required for vacataires (2) a questionnaire is sent at the end of the program	N/A	N/A

⁷costs for F2F events are also included

Budget for Quality Assurance	N/A	\$134,764 (5.43% of total operating budget)	\$11,923 (7.60% of total operating budget)	\$38,000 (3.58% of total operating budget)	\$2,965 (1.57% of total operating budget)
Issues	(1) program structure (2) amount of assessment and its high costs (3) ICT training	(1) budget allocation (2) establishment and maintenance of computer network (3) cost of examinations	(1) lack of qualified trainers (2) number of future vacataires (3) production process (4) tracking of trainees	(1) resource intensive program support (2) integration of academic and administrative systems (3) balance of resources between the core program team and direct student support	(1) reducing the number of units (2) weighting of assessments (3) nature of support

Operating budgets were developed to identify indirect program costs as well to create a more comprehensive picture of cost structures. This is important because the manner in which programs are planned and costed is critical to their subsequent success.

Similarities and differences can be seen with regard to cost distribution among the five models. The cost for assessment is high in all five cases. The cost for assessment is the highest of all four items in Ghana, and South Africa and Tanzania spend more on assessment than on trainee support. Tanzania's model has relatively high assessment costs which are nearly treble those of student support. This is because the program is composed of a large number of small units of study, each of which is carefully assessed. The model that spends the least on assessment than on trainee support is NTI, Nigeria. NTI spends 50% less on assessment than on trainee support.

Senegal, South Africa, and Tanzania show relatively high costs for program resources, particularly program management. In the case of Senegal, the costs of the program are concentrated within program management. Therefore, consideration is being given to the composition of a team to maximize the use of skills and resources. In the case of South Africa, program management costs to operate the central and regional center network are the highest, and the proportion of variable costs within learning resources, trainee support and assessment are relatively low. With the low number of trainees in Tanzania and South Africa, this high level of fixed costs, spread over the trainee base, leads to a relatively high per trainee unit cost. Table 2, *Presentation costs per trainee starter* reflects this. South Africa is \$5,700, Tanzania is \$3,300, Senegal is \$600 and Ghana is \$300. *Presentation and development costs per trainee per year* vary considerably. The highest unit costs for *presentation and development costs per trainee graduate* is \$8,300, and this illustrates how longer courses greatly increase costs.

In contrast with these models, Ghana and Nigeria show relatively low unit cost per trainee. In Nigeria's case, the unit cost for *presentation per trainee starter* is \$500, and this shows the benefit of large student numbers to offset fixed costs. Ghana shows the lowest project cost per trainee among the five models: The country with the *lowest unit cost per starter* and the *lowest*

unit cost per year is Ghana at \$300 and \$100 respectively. This demonstrates that the unit cost becomes lower when fixed costs can be spread over a large number of trainees.

Table 2

	Ghana (Institution of Education in Winneba, UEW)	Nigeria (National Teachers' Institute, NTI)	Senegal (Ecole Normale Superieure, ENS)	South Africa (Institution of Fort Hare, UFH)	Tanzania (Open Institution of Tanzania, OUT)
Trainee base					
Trainees enrolled to date	5,400	175,000	2,500	1,950	800
Trainees currently enrolled	1,800	24,000	800	400	100
Trainees graduated to date	1,600 (estimated)	62,000	2,100	1,500	26
Total projected trainee enrolments	6,5000 over program life of 10 annual cohorts	381,000 over program life of 19 annual cohorts	Above is total over program life of 3 annual cohorts	Above is total over program life of 5 annual cohorts	1,600 over program life of 16 annual cohorts
Presentation costs per trainee starter					
Learning resources	\$25 (10%)	\$75 (15%)	\$25 (5%)	\$250 (5%)	\$150 (5%)
Trainee support	\$50 (15%)	\$150 (30%)	\$150 (35%)	\$500 (10%)	\$300 (10%)
Assessment and quality assurance	\$125 (40%)	\$100 (20%)	\$100 (20%)	\$1,250 (25%)	\$1,050 (35%)
Program resources	\$100 (35%)	\$175 (35%)	\$175 (40%)	\$3,200(60%)	\$1,500(50%)
Total per trainee	\$300 (100%)	\$500 (100%)	\$450 (100%)	\$5,200 (100%)	\$3,000 (100%)
Presentation and development costs					
Total per trainee starter	\$300	\$500	\$600	\$5,700	\$3,300
Total per trainee per year	\$100	\$125	\$400	\$1,400	\$400

Total per trainee graduate	\$350	\$650	\$700	\$7,600	\$8,300
Fixed and variable costs per trainee starter					
Fixed costs	\$120 (40%)	\$175 (35%)	\$400 (65%)	\$4,800 (85%)	\$2,000 (60%)
Variable costs	\$180 (60%)	\$325 (65%)	\$200 (35%)	\$900 (15%)	\$1,300 (40%)

Issues in Planning and Implementation

A number of planning and implementation issues merit attention because of their potential implications with regard to the overall cost-structure of programs and eventually to cost-effectiveness.

(i.) Program design and content

During the preliminary scoping phase⁸ of the program, planners will need to consider the factors of content and course duration. The logistics of open and distance, often school-based, learning are different from conventional campus-based arrangements. While it is easy to manage a program with thirty or more courses on a single campus, it is more difficult to do the same throughout a region or at the national level. The University of Fort Hare, for example, made its program more cost-effective and easier to administer by integrating the content of traditionally shorter courses into long courses. The outcomes of training were achieved without a reduction in standards, with the mode of delivery facilitating teachers to work at a distance. Length of training also impacts significantly on cost. In many parts of the world, there has been an assumption that one year of full-time education equates to two years part-time. In a context where accreditation for prior learning and outcomes-based approaches are becoming the norm, such fixed conventions seem outmoded. This is particularly true for unqualified or under-qualified working teachers. For instance, in the case of Tanzania, the total cost per trainee graduate, \$8,300, is the highest of the five models, compared to Ghana's \$350. One of the reasons for this is that the Tanzanian program takes 6 years to complete, whereas Ghana only has a three year course. Reducing duration is one way to reduce costs.

(ii.) Assessment

⁸ See *Designing Open Distance Learning for Teacher Education in Sub-Saharan Africa: A Toolkit for Educators and Planners*, Working papers series 104, World Bank

During the initial development phase, planners should identify a cost effective system of assessment. All five models make use of formal examinations. This is an expensive option that may not foster practical classroom skills. It may be more effective, for instance, to have local tutors monitor teacher development using indicators of classroom performance rather than formal examinations. Also, the system of assessment, can constrain program effectiveness. In some programs, assessment accounts for up to 40% of costs. A major cost factor associated with assessment is the professional level of personnel who mark assignments and examinations. Sometimes this is done only by core institution academics, rather than contract staff. This is expensive and often introduces very lengthy delays in providing results and feedback to trainees. Changing grading arrangements could significantly reduce assessment costs.

(iii.) Training in using new technology

There is need to recognize that increasing integrating ICTs to increase access and the quality provision will require developing appropriate costing models. Costs of new technologies should be calculated not only in terms of the technology itself, but also the training and maintenance staff required. For example, one hidden cost that planners commonly overlook is the expensive use of academic staff time to key in data on computers, due to the fact that other less expensive staff are not sufficiently trained in word processing or data manipulation. For instance, in Ghana, donor organizations contributed 120 computers, but supporting personnel were inadequately trained to use and maintain these machines.

(iv.) Approach to costing

During the preliminary scoping phase, planners should consider the link between trainee achievement and the cost-effective use of resources as well as the balance of fixed costs and variable costs within the proposed trainee support model. In some cases, planners will make decisions to spend more money on fixed costs, such as program resources, than variable costs. For instance, in the case of South Africa, the fixed costs, especially for program management of the central and regional center network, are the highest. The proportion of variable costs for learning resources, trainee support and assessment are relatively low, and these high fixed costs also result in high unit costs. However, the outcome of this model is a high quality program with strong retention rates. When planners set up a costing model, it is imperative that they understand how this relates to the efficient use of resources and trainee achievement. In addition to this, planners should consider staff workloads. Excessive staff workloads with limited resources will threaten sustainability and growth over the longer term. Addressing all these issues in the planning phases of the programs will result in program design changes of benefit to students, staff, learning institutions and, ultimately, the quality of primary and secondary teaching in these nations.

Some Emerging Policy Lessons

These cost studies are relatively small in number, given that there are over 100 institutions across Africa, providing programs for teacher education at a distance. However, the organizational diversity of the study institutions and their national status of in their countries make it possible to already identify a number of broadly applicable with policy lessons, as well directions for further research:

- (i.) ODL can help teachers in the classroom while they continue to teach. This is a critical message for countries gearing up to achieve UPE and EFA. Each of the five cases reported on here demonstrates that teachers can remain in the classroom and teach while they continue to learn. The cases also demonstrate that this is true for both primary and secondary teachers. From the very small secondary program in Tanzania to the very large primary program in Nigeria, ODL is clearly shown to be an effective method of supporting serving teachers.
- (ii.) ODL can help provide opportunities for primary school teachers to upgrade their teaching qualifications, Nigeria, Ghana, Senegal, and also provide support which improves teaching and learning across school systems as the Fort Hare case demonstrates
- (iii.) The main methods used are still the old methods, print and face-to-face. Each of the five cases uses these two methods mainly. Utilization of modern technologies is almost zero and even radio/audio is limited. Modes of dealing with science teaching are traditional, requiring teachers to be brought to the laboratories. Policy makers and planners will need to give serious consideration as to how to better harness the increased possibilities of virtual education, now offered by modern ICTs, to modernize current delivery methods and improve the quality of provision, particularly with regard to science education.

With regard to costs

- (iv.) The first cost lesson is that the real benefit from all of these cases is the opportunity cost savings. Having teachers continue to teach while they upgrade or get qualifications benefits the education system: teachers remain in the classroom and learn to do their job better; and it also benefits the individual teacher: they continue to get their salaries, remain with their families and have an opportunity to get upgraded. While these benefits are significant, they have not been costed.
- (v.) The second lesson is that the costs can be quite low, \$300 per student in Ghana, \$500 per student in Nigeria. It is highly likely that the costs of the traditional alternative are greatly in excess of this. And the traditional alternative takes students away from the classroom and their homes.
- (vi.) Third, scale is vital. Courses for small numbers are expensive as evidenced by the OUT course and the Fort Hare course. Large numbers of students bring economies of scale. This is clear from the Nigeria case.

- (vii.) Fourth, in regard to the cost breakdown, the more face-to-face teaching and contact there is, the closer the costs get to the traditional teachers courses. substantial investment in the development of high quality printed materials and suitable media/ICTs may be required to reduce the need for face-to-face teaching
- (viii.) Fifth, materials development costs versus face-to-face costs are the two critical elements with regard to policy options. Assessment or ensuring parity of quality is also important.
- (ix.) Accreditation of prior learning can reduce the costs and lessen the load of participating teachers.

COST STRUCTURE SUMMARY OF COST CASE STUDIES

These case study costing data are based on information provided in October and November 2004. Each case study gives an overall view of the cost structures for the programme and then extrapolates from a snapshot in time. It is not a detailed representation of the programme.

Case Study	Programme Level Length	Trainee Numbers		Programme Development Est. Initial Costs (\$)	Presentation Costs		Other Comment
		Enrolled to date	Enrolled annually Graduates to date		per Trainee (\$)	per Trainee (%)	
					Learning Resources Trainee Support Assessment & QA Programme Resources	Learning Resources Trainee Support Assessment & QA Programme Resources	
1: University of Fort Hare (in Eastern Cape Province of South Africa)	Primary B. Ed Distance Education Primary level & in-service 4 years	1,950		900,000	250	5%	High proportion of fixed & pro costs to be borne irrespective numbers
		400			500	10%	
		1,500			1,250	25%	
		<i>Above is total over 5 annual cohorts of programme life</i>			3,200	60%	
2: Open University of Tanzania	B.Sc. with Education Secondary level & in-service 6 to 8 years	800		450,000	150	5%	Costs of assessment treble th trainee support Central programme team & fu required irrespective of trainee
		100			300	10%	
		26			1,050	35%	
		<i>1,600 trainees projected over 16 annual cohorts of programme life</i>			1,500	50%	
3: University of Education, Winneba (in Ghana)	Diploma in Basic Education Primary level & in-service 3 years	5,400		350,000	25	10%	Costs of assessment nearly t of trainee support Programme team & functions spread over greater trainee n operating to larger scale
		1,800			50	15%	
		1,600 (est.)			125	40%	
		<i>65,000 trainees projected over 10 annual cohorts of programme life</i>			100	35%	

Case Study	Programme Level Length	Trainee Numbers		Programme Development Est. Initial Costs (\$)	Presentation Costs		Other Comment
		Enrolled to date	Enrolled annually Graduates to date		per Trainee (\$)	per Trainee (%)	
					Learning Resources	Learning Resources	
					Trainee Support	Trainee Support	
					Assessment & QA	Assessment & QA	
					Programme Resources	Programme Resources	
4: Ecole Normale Superieure (in Senegal)	Upgrading Teacher Training Secondary level & in-service 1 to 2 years	2,500	400,000	25	5%	Costs focus on trainee supp Programme team & function proportion of total costs - co potential for restructuring	
		800		150	35%		
		2,100		100	20%		
		<i>Above is total over 3 annual cohorts of programme life</i>		175	40%		
5: National Teachers' Institute (in Nigeria)	Nigerian Certificate in Education Primary level & in-service 4 to 5 years	175,000	1,400,000	75	15%	More even spread of costs \ emphasis on trainee support Programme team & function spread over greater trainee operating to larger scale	
		24,000 (in 2004)		150	30%		
		62,000		100	20%		
		<i>381,000 trainees projected over 19 annual cohorts of programme life</i>		175	35%		

Table 33: Cost structure summary of cost case studies

OVERALL SUMMARY OF COST CASE STUDIES

These case study costing data are based on information provided in October and November 2004. Each case study gives an overall view of the cost structures for the programme and then extrapolates from a snapshot in time. It is not a detailed representation of the programme.

Case Study	Programme Level Length	Trainee Numbers Enrolled to date Enrolled annually Graduates to date	Predominant Media in Use	Other Supports	Costs (\$) Total per Trainee Fixed (& %) Variable (& %) Annual per Trainee Total per Graduate	Other Comments
1: University of Fort Hare (in Eastern Cape Province of South Africa)	Primary B. Ed Distance Education Primary level & in-service 4 years	1,950	Print study texts	Face to face tutorials Assignments Portfolios Affirmation	\$5,700	Costs could be reduced by: (i) restructuring regional centre network; (ii) restructuring core program team
		400			\$4,800 (85%)	
		1,500			\$900 (15%)	
		<i>Above is total over 5 annual cohorts of programme life</i>			\$1,400	
					\$7,600	
2: Open University of Tanzania	B.Sc. with Education Secondary level & in-service 6 to 8 years	800	Print study texts	Residential practicals Teaching practice Assignments Timed tests Examinations	\$3,300	Costs could be reduced by: (i) recognising prior learning & shortening programme length; (ii) new course structure; (iii) reducing weight of assessm
		100			\$2,000 (60%)	
		26			\$1,300 (40%)	
		<i>1,600 trainees projected over 16 annual cohorts of programme life</i>			\$400	
					\$8,300	
3: University of Education, Winneba (in Ghana)	Diploma in Basic Education Primary level & in-service 3 years	5,400	Print study texts	Face to face tutorials Residential schools Assignments Examinations	\$300	Based on proposed expansion which could pose key questions: (i) achieving planned trainee nu (ii) adequacy of staffing & infras Costs could be reduced by: (i) new course structure; (ii) reducing weight of assessm
		1,800			\$120 (40%)	
		1,600 (est.)			\$180 (60%)	
		<i>65,000 trainees projected over 10 annual cohorts of programme life</i>			\$100	
					\$350	

Case Study	Programme Level Length	Trainee Numbers Enrolled to date Enrolled annually Graduates to date	Predominant Media in Use	Other Supports	Costs (\$)		Other Comments
					Total per Trainee Fixed (& %) Variable (& %)	Annual per Trainee Total per Graduate	
4: Ecole Normale Superieure (in Senegal)	Upgrading Teacher Training Secondary level & in-service 1 to 2 years	2,500	Print study texts	Face to face tutorials Residential schools Teaching practice Assignments Examinations	\$600 \$400 (65%) \$200 (35%)		Costs could be reduced by: (i) restructuring staff team, w/ additionally release academic
		800 2,100 <i>Above is total over 3 annual cohorts of programme life</i>					
5: National Teachers' Institute (in Nigeria)	Nigerian Certificate in Education Primary level & in-service 4 to 5 years	175,000	Print study texts	Face to face tutorials Teaching practice Assignments Tests Examinations	\$500 \$175 (35%) \$325 (65%)		Costs could be reviewed by: (i) examining effectiveness of strands in assessment and si models
		24,000 (in 2004) 62,000 <i>381,000 trainees projected over 19 annual cohorts of programme life</i>					

Table 34: Overall summary of cost case studies

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Teacher Education, Distance Education, Nigeria

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This survey examines key issues for the development of distance education in Sub-Saharan Africa (focusing on Anglophone areas), including management and administration, curriculum and course design and quality assurance. It draws on several case studies from ten countries (Botswana, Ghana, Kenya, Mauritius, Mozambique, Namibia, Nigeria, South Africa, Uganda and Zambia).

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Profiles of open and distance learning provision from institutions in 11 African countries (each covering country context, institutional context and planning and implementation issues) are drawn from papers developed by African distance educators for a workshop on planning and management in open and distance learning held in Cape Town, South Africa, 9–12 December 2002. The workshop was sponsored by the Commonwealth of Learning, World Bank and UNESCO. Country studies include: Botswana, Ghana, Kenya, Mauritius, Mozambique, Nigeria, Sierra Leone, Swaziland, Tanzania, Uganda and Zambia.

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Distance Education, Educational Policy, National Policies, Technology, Costs, Bangladesh, Brazil, China, Egypt, India, Indonesia, Mexico, Nigeria, Pakistan

A description of current and possible future developments of distance education programs in the nine high-population countries, this report studies the impact of new technologies in the drive towards Education for All in a series of country reports (including one on Nigeria), and presents an analysis of outcome and costs.

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Distance Education, Teacher Education, Secondary Education, Africa

This paper reviews distance education at the secondary level and for teacher education in six African countries: Ethiopia, Kenya, Lesotho, Malawi, Zambia and Zimbabwe. The discussion covers government support for teacher education, institutional structures for distance education, management and administration of distance education programs, media and teaching methods, and cost-effectiveness.

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This paper deals with a theoretical model for the development of resources for the training of teachers and support staff in the primary education sector through the distance mode, considered in terms of capacity building, designing, development, production and delivery. Operation of the model is illustrated by the Distance Education Program of India.

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Teacher Education, Distance Education, Open Learning, Technology, ICT, Africa

Contribution to the Pan-Commonwealth Forum on Open Learning on the relationship between ICT and teacher education in Africa.

- 33 DOCK, A. & HELWIG, J. (1999), *Interactive radio instruction: impact, sustainability, and future directions*, Washington, World Bank, Working Paper (Education and technology technical notes series vol 4, no 1)

Technology, Interactive Radio, Distance Education, Developing Countries

This study presents a synthesis of knowledge and experience accumulated over the past 25 years in the use of Interactive Radio Instruction (IRI) in more than 20 developing countries and posits its viability as an educational tool in areas where computers continue to be unavailable.

- 34 DODDS, T. (1994), 'Distance learning for pre-tertiary education in Africa', in M. THORPE & D. GRUGEON (eds.) *Open learning in the mainstream*, Harlow, Longman

Distance Education, Teacher Education, Africa

Broad summary of development of distance learning programs for out-of-school secondary, teacher and adult basic education in Africa, with emphasis on Anglophone and Swahiliphone areas.

- 35 DUNLOP, C. (2004), *COL-AVU eLearning Workshop Evaluation Report – Nairobi, Kenya*, Commonwealth of Learning

Available online: http://www.col.org/04Kenya_EvalRpt.pdf (accessed 21.1.05)

Distance Education, Educational Policy, Open Learning, Africa

Designed to aid e-learning instructional designers and developers, policy makers and administrators involved in higher education in Africa, this report describes the eLearning Workshop (9–20 August 2004) which took place at Kenyatta University, Kenya. The report includes a summary of findings (from participants), and a draft policy formulated at the workshop to specify some guidelines to promote the development and use of open learning and provide a basis for institutions to adopt a standardized and structured approach.

- 36 FAGBAMIYE, E. (1999), 'Mobilizing for teacher preparation through distance learning: a review of strategies', in *Regional Seminar on the Development of Collaborative Projects in Distance Education*, 1–4 March 1999, University of Ibadan, Nigerian Commission for UNESCO

Distance Education, Teacher Education, Nigeria

A review of strategies for the implementation of distance teacher education programs in Nigeria.

- 37 FILLIP, B. (2000), *Distance education in Africa : new technologies and new opportunities*, Washington DC, Japan International Cooperation Agency, USA Office

Available online: <http://www.santren.com/live/santren/content/e1/e3/DLAfrica.doc> (accessed 28.1.05)

Distance Education, Secondary Education, Teacher Education, Technology, Africa

A review of the potential of distance education in Sub-Saharan Africa (with a particular focus on the exploitation of new technologies), and of the state of information and communications infrastructure, this report includes four short case studies on contrasting areas: Ghana (Anglophone), Ethiopia (multilingual), Botswana (Anglophone) and Guinea (Francophone).

- 38 GULTIG, J. & BUTCHER, N. (1996), *Teacher education offered at a distance in South Africa: report for the national audit, April–November 1995*, South African Institute for Distance Education (SAIDE)

Distance Education, Teacher Education, Quality, South Africa

A review of the national situation of distance teacher education in South Africa in 1995.

- 39 HALL, W.M. & MARRETT, C. (1996), 'Quality teacher education via distance mode: a Caribbean experience', *Journal of Education for Teaching*, **22** (1), Mar, pp. 85-94

Distance Education, Teacher Education, West Indies

This article discusses the potential of distance education as a delivery mode for quality teacher education with reference to the University of the West Indies Distance Teaching Experiment (UWIDITE). This provides distance education based on an interactive teleconference network, as an alternative mode to traditional pre-service teacher education programs.

- 40 HAWKRIDGE, D. (1999), 'Distance learning: international comparisons', *Performance Improvement Quarterly*, **12** (2), pp. 9-21

Distance Education, Educational Policy, National Policies, Costs, Developing Countries

The author reviews the potential of distance learning as a cost-effective solution to mass education programs in developing countries, while emphasizing the need for each country to generate its own model.

- 41 HAWKRIDGE, D. (2000), *Comparing educational media* [online], IMFUNDO, Department for International Development, KnowledgeBank Paper No 9

Available from: <http://imfundo.digitalbrain.com/imfundo/web/plan/documents/kb9/kb9.pdf?verb=view%20> (accessed 25.1.05)

Distance Education, Open Learning, Educational Media, Costs, Technology, Africa

This paper examines the relative costs of different types of media used to deliver open and distance learning. It also provides a general overview of how text, audio, video and computer technologies are being used to support distance education in Sub-Saharan Africa.

- 42 HELLMAN, J.A. (2003), 'An unquestionably positive step forward', *UN Chronicle*, **40** (4), 12, Dec 2003–Feb 2004, pp. 47-49

Distance Education, Educational Technology, Developing Countries, Developed Countries

A view on the social and economic factors which influence the assessment of the benefits of distance education in developing countries.

- 43 HOLMES, D.R. (1991), *Nepal: Training Teachers at a Distance: A Case Study of Nepal's Radio Education Teacher Training Project*, Washington, Agency for International Development (IDCA), Bureau of Science and Technology; Kathmandu, Nepal Ministry of Education and Culture

Distance Education, Teacher Education, In-service Teacher Education, Primary School Teachers, Educational Radio, Costs, Cost-effectiveness, Developing Countries, Nepal

This publication provides a case study of the Radio Education Teacher Training Project (RETP) operating in Nepal, which uses a multifaceted distance learning system to train primary school teachers. It includes a comparative cost-effectiveness analysis of the RETP's latest program, Basic Teacher Training, and its conventional face-to-face alternatives, and a summary of the lessons that Nepal's experiences with the distance training of teachers may offer to policy makers elsewhere. Fifteen tables providing cost analyses are appended.

- 44 HUELSMANN, T. (2000), *The costs of open learning: a handbook*, Oldenburg, Germany, Bibliotheks- und Informationssystem der Carl von Ossietzky Universität

Distance Education, Open Learning, Educational Planning, Technology, Costs

A guide for managers planning the use of educational technologies for open learning, this book suggests means to compare and control the costs of various options. (Includes 11 case studies from six European countries.)

- 45 INTELECON RESEARCH & COMMONWEALTH OF LEARNING (2000), *The Use of Information and Communications Technology (ICT) in Learning and Distance Education – South Africa, Ghana, Mozambique, Fiji, Trinidad & Tobago, Canada*, Commonwealth of Learning

Available online: <http://www.col.org/colint/00intelecon.htm> (accessed 21.1.05)

Distance Education, Educational Media, Technology, ICT, Costs

Six country case studies were undertaken to examine ICT-based learning, and distance education, across the Commonwealth. This report describes the current state of use, highlights key policy issues of telecommunications and media, discusses the financing and operation of infrastructure services and examines the impact of technological trends on future use of ICT for learning and distance education.

- 46 IRELE, M. (1999), *Distance education and teacher training in Sub-Saharan Africa; Background Paper*, Paris, UNESCO

Distance Education, Teacher Education, Africa

A background paper giving a general overview of distance teacher education programs.

- 47 KACHELHOFFER, P.M. (1995), 'Teacher training models for a new South Africa', *Teacher Education Quarterly*, 22 (1), Winter, pp. 49-57

Teacher Education, Pre-service Teacher Education, Secondary Education, Politics of Education, Developing Countries, South Africa

The paper examines the education of teachers in South Africa at a time of social change and suggests teacher training models suitable for developing countries.

- 48 KARANI, F.A. (1995), 'Teacher training through the distance education mode of delivery in Kenya', *Journal of Development Communication*, 6 (2), Dec, pp. 72-80

Teacher Education, Distance Education, Kenya

A review of distance education methods for teacher training in Kenya with suggestions as to their effectiveness in particular areas.

- 49 KENYA MINISTRY OF EDUCATION, SCIENCE & TECHNOLOGY (2003), 'Teacher Education in Kenya: Improving Teaching and Learning through Distance Education', in papers presented to *10th Cambridge International Conference on Open & Distance Learning*, 23–26 September 2003, Cambridge, UK

Teacher Education, Distance Education, Kenya

Conference paper discussing the current status of distance teacher education in Kenya and suggesting how improvements may be made.

- 50 KILUMA, J.M. (2002), 'The cost dilemma in open learning and distance education: A case study of the Open University of Tanzania', in *PAN-Commonwealth Forum on Open Learning*, 29 July–2 August 2002, Durban, South Africa, Commonwealth of Learning

Abstract available online: <http://www.col.org/pcf2/papers/kiluma.pdf> (accessed 28.1.05)

Distance Education, Open Learning, Costs, Tanzania

A study of the cost implications for students of distance education programs with reference to the experiences gained by the Open University of Tanzania.

- 51 KINYANJUI, P. (1996), 'Recent developments in African distance education', in *Proceedings of Conference on Internationalism in Distance Education*, University Park, Pennsylvania State University, American Centre for the Study of Distance Education

Distance Education, Africa

Paper presenting a general overview of the status of distance education in Africa in 1996.

- 52 KINYANJUI, P.E. (1998), 'Distance Education and Open Learning in Africa: what works or does not work', in *EDI/World Bank Workshop on Teacher Education through Distance Learning*, May 1998, Addis Ababa, Ethiopia

Available online: http://www.col.org/speeches/edi_africa98.htm (accessed 25.1.05)

Distance Education, Program Development, Technology, Costs, Africa

Lessons are drawn from a review of the process of establishing open learning and distance education systems in Africa focusing on what has, or has not worked well. The human, physical, financial and technological resources required for a distance education project are discussed with analysis of costs.

- 53 KUNJE, D. & LEWIN, K.M. (2000), *The costs and financing of teacher education in Malawi (Multi-Site Teacher Education Research Project)*, Centre for International Education, University of Sussex Institute of Education, MUSTER Discussion Paper No 3

Available online: http://www.sussex.ac.uk/usie/muster/pdf/mpd_2_11_02.pdf (accessed 27.1.05)

Teacher Education, Costs, Educational Policy, Malawi

This paper describes the national situation in Malawi and explores the costs and financing of teacher education with particular reference to the MIITEP (Malawi Integrated Inservice Teacher Education Program).

- 54 KURUBA, G. (2004), 'Technology based distance education for adult learners – a case of Botswana', in *Third Pan-Commonwealth Forum on Open Learning*, 4–8 July 2004, Dunedin, New Zealand, Distance Education Association of New Zealand; Commonwealth of Learning

Available from: http://www.col.org/pcf3/Papers/PDFs/Kuruba_Gangappa.pdf (accessed 18.1.05)

Distance Education, Technology, Adult Education, Teacher Education, Botswana

This paper analyses the development of distance education in Botswana; the significance of technological advances and their viability for use in the country.

- 55 LEACH, J. & LITA, Z. (1996), 'Regenerating teacher professional development through open and distance learning: the Albania "Kualida" project', in *Lifelong learning, open learning, distance learning: Proceedings*

of the 5th European Distance Education Network (EDEN) Conference, 8–10 July 1996, Poitiers, France, pp. 112-118, EDEN Secretariat, Milton Keynes

Distance Education, Teacher Education, Albania

A description of the use of open and distance learning techniques to support the requirements of teacher professional practice in Albania.

- 56 LEACH, J. & MOON, B. (1995), *Open and Distance Learning and Teaching in the education and training of Albanian teachers*, Centre for Research in Teacher Education, Open University, UK

Distance Education, Open Learning, Teacher Education, Albania

An overview highlighting the social and cultural context of teacher education in Albania, and discussing the application of open and distance learning systems to in-service training.

- 57 LEACH, J. & MOON, B. (2004), '4d Technologies: Can ICT make a real difference in achieving the goal of universal primary education?' in *Third Pan-Commonwealth Forum on Open Learning*, 4–8 July 2004, Dunedin, New Zealand, Distance Education Association of New Zealand; Commonwealth of Learning

Teacher Education, Technology, ICT, Developing Countries

A description of the potential of ICT to improve the quality of teacher education in the developing world with reference to the Digital Education Enhancement Project (DEEP) which investigates the impact of new technology on teachers' practices. A study of teachers' use of handheld computers is reported.

- 58 LEACH, J., MOON, B. & POWER, T. (2002), 'Building teachers' professional knowledge through ICT: experience and analysis across the "digital divide"', in *European Conference on Educational Research*, 11–14 September 2002, University of Lisbon

Available online: <http://www.leeds.ac.uk/educol/documents/00002349.htm> (accessed 21.1.05)

Teacher Education, Technology, ICT, South Africa, Egypt

This paper focuses on the Digital Education Enhancement research and development Project (DEEP), which is exploring the use of ICT for teaching and learning in a range of primary schools in Egypt and South Africa. DEEP highlights the potential of ICTs for transforming teacher development and learning, and increasing the efficiency of aspects of teacher professional development.

- 59 LEACH, J. & POWER, T. (2004), *DEEP Impact: an investigation of the use of information and communication technologies for teacher education in the global south*, London, Department for International Development

Teacher Education, Technology, ICT

Report on the DEEP project, an investigation of the use of ICT to improve basic and teacher education. The Digital Education Enhancement Project, part-funded by DFID, is an applied research project exploring the ways in which ICT can improve the access to, and the quality of, teacher education in the global south.

- 60 LEWIN, K. (1999), *Counting the cost of teacher education: cost and quality issues (Multi-Site Teacher Education Research Project)*, Centre for International Education, University of Sussex Institute of Education, MUSTER Discussion Paper No 1

Available online: http://www.sussex.ac.uk/usie/muster/pdf/mpd_1_11_02.pdf (accessed 27.1.05)

Teacher Education, Pre-service Teacher Education, Costs, Developing Countries

This paper explores resource and cost issues in the provision of teacher education, focusing on patterns of education and training which lead to initial qualification. (An introduction to the Multi-Site Teacher Education Research Project, which studies data in Ghana, Lesotho, Malawi, and Trinidad and Tobago.)

- 61 LEWIN, K. (2002), 'The costs of supply and demand for teacher education: dilemmas for development', *International Journal of Educational Development*, **22** (3/4), pp. 221-242

Teacher Education, Primary Teacher Education, Costs, Developing Countries

This paper explores some of the financial issues that arise for teacher education policy and practice in developing countries with specific reference to Ghana, Lesotho, Malawi, and Trinidad and Tobago. It analyses the costs of different training systems and discusses the results in the context of targets contained in national plans to provide education for all.

- 62 LEWIN, K.M., NTOI, V., NENTY, H.J. & MAPURU, P. (2000), *The costs and financing of teacher education in Lesotho (Multi-Site Teacher Education Research Project)*, Centre for International Education, University of Sussex Institute of Education, MUSTER Discussion Paper No 10

Available online: http://www.sussex.ac.uk/usie/muster/pdf/mpd_10_11_02.pdf (accessed 27.1.05)

Teacher Education, Costs, Educational Management, Lesotho

This study explores the costs and financing of the teacher education system in Lesotho, describing the development of training provision and the role of the NTTC (National Teacher Training College).

- 63 LEWIN, K.M. & STUART, J.S. (2002), *Researching teacher education: new perspectives on practice, performance and policy*, Centre for International Education, University of Sussex Institute of Education, MUSTER Research Report No 5

Available online: http://www-unix.oit.umass.edu/~educ870/teacher_education/Documents/Muster-Synthesis%20Lewin&Stuart.pdf (accessed 21.1.05)

Teacher Education, Educational Policy, Educational Research, Costs, Developing Countries

Synthesis report of the MUSTER (Multi-Site Teacher Education Research) Project, a four-year program of research on teacher education supported by the Department for International Development and focused on insights from Ghana, Lesotho, Malawi, and Trinidad and Tobago.

- 64 LEWIN, K.M. & STUART, J.S. (2003), 'Insights into the policy and practice of teacher education in low-income countries: the Multi-site Teacher Education Research Project', *British Educational Research Journal*, **29** (5), 10, pp. 691-707

Teacher Education, Primary Teachers, Educational Planning, Costs, Developing Countries

The Multi-Site Teacher Education Research project (MUSTER) explores initial teacher education in five countries: Ghana, Lesotho, Malawi, South Africa, and Trinidad and Tobago. Data collected by national research teams is analysed to provide insights into the training process, outcomes, supply and demand for new teachers and the resource and cost implications of meeting national targets to universalize primary schooling.

- 65 LEWIN, K., SAMUEL, M. & SAYED, Y. (eds.) (2003), *Changing patterns of teacher education in South Africa: policy, practice and prospects*, Sandown, South Africa, Heinemann

Teacher Education, Educational Policy, Educational Change, South Africa

A range of contributions analysing the history, context, provision and policy of teacher education in South Africa.

- 66 LOW, J. (1996), *Policies and issues related to the role of distance education as a model for teacher education in South Africa*, MA in Education and Development, University of London (Institute of Education)

Teacher Education, Distance Education, Educational Policy, South Africa

Unpublished dissertation exploring the context of distance education in South Africa and its applicability to teacher education.

- 67 MANJULIKA, S. & REDDY, V. (1999), *Distance Education in India: a model for developing countries*, New Delhi, Vikas Publishing House

Distance Education, Developing Countries, India

A discussion of distance education practice and policy issues in India and their application in developing countries.

- 68 MAYS, T. & BUTCHER, N. (2004), *Costing summary of ten South African case studies* [online], South African Council on Higher Education, Background Paper 3

Available from: http://www.che.ac.za/documents/d000070/Background_Paper3_Mays_Butcher.pdf (accessed 29.1.05)

Distance Education, Costs, South Africa

An examination of the costs of offering distance education or mixed-mode courses in various higher education institutions in South Africa by analysis of ten case studies, this paper uses a costing model (based on a Microsoft Access database platform) developed as a tool for planners with no special financial expertise. (Background paper to the report *Enhancing the contribution of Distance Higher Education in South Africa*.)

- 69 MILLER, E. (2001), 'Models in Distance Teaching in Teacher Education in Jamaica', in *Distance Education in Small States*, 27–28 July 2000, Ocho Rios, Jamaica, pp. 141-147, The University of the West Indies, Commonwealth of Learning

Available online: http://www.col.org/resources/publications/SmallStates00/2_conf_proc_master.pdf (accessed 26.1.05)

Teacher Education, Distance Education, Developing Countries

This paper presents a historical review of models used in Jamaica to deliver initial and in-service teacher education. These exemplify a range and combination of methods from face-to-face to online. Some conclusions are drawn with respect to the feasibility of these models and implications for further use.

- 70 MODIBA, M. (1997), 'Distance teacher education in South Africa: A critical analysis of pedagogical assumptions', *Teaching and Teacher Education*, **13** (7), Oct, pp. 727-739

Distance Education, Teacher Education, In-service Teacher Education, South Africa

This paper evaluates the evidence from the results of distance education programs for teacher upgrading and contends that both content and pedagogy need to be improved if the mode is to be considered successful.

- 71 MOJA, T. (1992), 'Teacher education from classroom broadcasts for the new South Africa', *Educational Media International*, **29** (3), Sep, pp. 171-174

Distance Education, Educational Radio, Interactive Radio, Technology, Cost-effectiveness, Higher Education, Teacher Education, South Africa

Educational technology resources (particularly interactive radio) available in South Africa are discussed with suggestions for their possible use in teacher education.

- 72 MOKHETHI, M. (2002), 'Distance Teacher Education Program: some lessons from the Lesotho project', in *PAN-Commonwealth Forum on Open Learning*, 29 July–2 August 2002, Durban, South Africa, Commonwealth of Learning

Available online: <http://www.col.org/pcf2/Content%20page%20-%20Abstract%20booklet.doc#MI> (accessed 19.1.05)

Distance Education, Teacher Education, Lesotho

Case study reviewing the Distance Teacher Education Project in Lesotho.

- 73 MONK, M. (1999), *In service for teacher development in Sub-Saharan Africa: a review of literature published between 1983–1997*, London, Department for International Development Education Division

Teacher Education, In-service Teacher Education, Africa

This report, which researched teachers' working conditions, backgrounds, practices and in-service needs, includes a chapter on the use of distance education. Current in-service activities which assist teachers to update their knowledge and skills are reviewed.

- 74 MOON, B. (2000), 'The open learning environment: a new paradigm for international developments in teacher education', in B. MOON, S. BROWN & M. BEN-PERETZ (eds.) *The Routledge International Companion to Education*, London, Routledge

Distance Education, Open Learning, Teacher Education, International Developments

An overview of current approaches to teacher education provided through open learning programs.

- 75 MOON, B. (2004), 'Open Learning and ICTs: a radical solution to preparing teachers to meet the Universal Basic Education (UBE) challenge', in *Third Pan-Commonwealth Forum on Open Learning* 4–8 July 2004, Dunedin, New Zealand, Distance Education Association of New Zealand; Commonwealth of Learning

Available online: http://www.col.org/pcf3/Papers/PDFs/Moon_Bob.pdf (accessed 27.1.05)

Teacher Education, Open Learning, Technology, Developing Countries

A discussion of the role of educational technology and open learning in the drive to train enough teachers to enable the provision of universal basic education.

- 76 MOON, B., LEACH, J. & STEVENS, M.S. (2004), *Open and Distance Learning for Teacher Education in Africa: Innovation and change*, Washington DC, World Bank, Africa Region Human Development Working Paper Series No 53

Teacher Education, Open Learning, Distance Education, Africa

Part of 'A Toolkit for Education Policy Makers, Planners and Teacher Educators in Sub-Saharan Africa', this paper reviews the current climate for distance teacher education in Africa.

- 77 MOORE, B. (1995), *Distance Education Project for the Inservice Education of Teachers for Reconstruction and Development in the Eastern Cape Province of The Republic of South Africa*, Adelaide, University of South Australia

Distance Education, In-service Teacher Education, South Africa

Report of a feasibility study undertaken to analyse the viability of a distance education project for in-service teacher education in the Eastern Cape Province.

- 78 MUIANGA, E. & FRANQUE, A.D. (1994), 'Distance education in Mozambique', paper presented to *UNESCO Sub-Regional Seminar on Distance Education*, 14–17 November 1994, Dar-es-Salaam, Tanzania, Mozambican National Commission for UNESCO

Distance Education, Teacher Education, Primary Teachers, Mozambique

A description of a distance education initiative by the Institute of Teacher Up-Grading to pilot in-service training of primary school teachers in five provinces.

- 79 MURPHY, P., ANZALONE, S., BOSCH, A. & MOULTON, J. (2002), *Enhancing Learning Opportunities in Africa: Distance education and information and communication technologies for learning*, Washington DC, World Bank, Africa Region Human Development Working Paper Series

Distance Education, Technology, ICT, Teacher Education, Primary Education, Secondary Education, Tertiary Education, Africa

Beginning with a synthesis of existing knowledge on the use of distance education and ICTs in Africa, the report discusses ways in which ICTs can support education systems including primary, secondary, teacher development and tertiary. It identifies the conditions that must be addressed in making effective use of distance education methods and ICTs.

- 80 MURPHY, P. & ZHIRI, A. (1992), *Distance education in anglophone Africa : experience with secondary education and teacher training*, Washington, DC, World Bank, EDI (Economic Development Institute) Development Policy Case Series: Analytical Case Studies No 9

Distance Education, Costs, Secondary Education, Teacher Education, Africa

This book contains papers presented at a seminar for senior policymakers held in Zimbabwe on 7–11 May 1990, sponsored by the Economic Development Institute of the World Bank and Higher Education for Development Cooperation, Ireland, which focus on the relative effectiveness, cost and status of distance education. Case studies of a number of distance education systems functioning in Africa are included with comments on their organization and management.

- 81 NG, K. (2000), 'Costs and effectiveness of online courses in distance education', *Open Learning*, **15** (3), 11, pp. 301-308

Distance Education, Open Learning, Online Technology, Costs

This paper discusses issues concerning the costs and effectiveness associated with using online technology in distance education. A pilot project on an online course at the Open University of Hong Kong is used as an illustrative example.

- 82 NHUNDU, T.J., KAMAU, J.W. & THUTOETSILE, T.T. (2002), 'From correspondence to open and distance learning: the Botswana experience', in *PAN-Commonwealth Forum on Open Learning*, 29 July–2 August 2002, Durban, South Africa, Commonwealth of Learning

Available online: <http://www.col.org/pcf2/N1> (accessed 19.1.05)

Distance Education, Open Learning, Teacher Education, Educational Policy, Botswana

A review of the history of distance education initiatives in Botswana (including those related to teacher training), this article describes the current situation in terms of policy, funding and technology.

- 83 NIELSEN, H.D. & TATTO, M.T. (1993), 'Teacher upgrading in Sri Lanka and Indonesia', in H. PERRATON (ed.) *Distance Education for Teacher Training*, London, Routledge, pp. 95-135

Teacher Education, Distance Education, Costs, Sri Lanka, Indonesia

Comparative assessment of costs and effectiveness of teacher education at a distance within and between Sri Lanka and Indonesia.

- 84 NIELSEN, H.D., TATTO, M.T., DJALIL, A. & KULARATNE, N. (1991), *The Cost-Effectiveness of Distance Education for Teacher Training*, Agency for International Development (IDCA), Washington, DC, Bureau of Science and Technology, BRIDGES Research Report Series No 9

Distance Education, Pre-service Teacher Education, In-service Teacher Education, Educational Policy, Cost-effectiveness, Developing Countries, Indonesia, Sri Lanka

This study, conducted by the Basic Research and Implementation in Developing Education Systems (BRIDGES) Project at Harvard University, describes distance education programs for in-service teacher training in Sri Lanka and Indonesia and demonstrates their cost-effectiveness.

- 85 NZIRAMASANGA, C.T. (1991), 'Teacher education innovation in Zimbabwe', *Action in Teacher Education*, 13 (3), Fall, pp. 16-20

Pre-service Teacher Education, Secondary Education, Higher Education, Educational Policy, Developing Countries, Zimbabwe

This article describes teacher education policies in Zimbabwe since independence and highlights the implications of the general expansion in all levels of education for teacher training.

- 86 OGUNSANYA, M. (1995), 'An experiment in distance education: the experience of the University of Ibadan, Nigeria', in *One world, many voices: quality in open and distance learning*, 26-30 June 1995, Birmingham, UK, International Council for Distance Education; Open University UK

Distance Education, Teacher Education, Tertiary Education, Nigeria

This paper describes the distance education program leading to the degree of Bachelor of Education run by the University of Ibadan and the problems encountered in provision and delivery.

- 87 ORIVEL, F. (2000), 'Finance, costs and economics', in: J. BRADLEY & C. YATES (eds.) *Basic education at a distance: World Review of Distance Education and Learning, Vol 2*, London, Routledge, pp. 138-151

Distance Education, Open Learning, Costs, Technology, ICT, Developing Countries

This chapter questions the ability of new information and communication technologies to provide a feasible and sustainable solution to the problems of education provision in developing countries.

- 88 PECKU, N.K. (1998), *Survey of current status of distance education in Cameroon*, Vancouver, Commonwealth of Learning

Summary available online: <http://www.col.org/consultancies/98Cameroon.htm> (accessed 27.1.05)

Distance Education, Teacher Education, Cameroon

A review of the effectiveness of distance education programs in Cameroon (including that provided by the Ecole Normale Supérieure [ENS] which aims at improving the competence of teachers to teach French as a second language), this paper highlights a teacher education program which sought to upgrade the qualifications of professional teachers and provide non-professional teachers with basic professional training. Reasons for the failure of this program are discussed.

- 89 PENROSE, P. (1993), *Planning and financing sustainable education systems in Sub-Saharan Africa*, London, Department for International Development Education Division

Educational Finance, Educational Planning, Africa

DFID Education Paper exploring issues of cost and management in the expansion of educational provision in Africa (reprinted 1998).

- 90 PERRATON, H. (1993), *Distance education for teacher training*, London, Routledge

Distance Education, Teacher Education, Developing Countries

Contributions to this volume (which includes material on Tanzania, Zimbabwe and Nigeria) are arranged in four sections and cover: Pre-service initial training of teachers; In-service initial training of teachers; Continuing education; and Quality, Effectiveness and Costs. The book consists of three overview chapters and 11 case studies (mostly carried out in the late 1980s).

- 91 PERRATON, H. (1993), 'National developments and international cooperation in distance education in Commonwealth Africa', in K. W. HARRY ET AL. (ed.) *Distance education: new perspectives*, London, Routledge, pp. 250-260

Distance Education, Teacher Education, Tertiary Education, Africa

This chapter reviews the range of distance education programs operational in Commonwealth Africa including teacher education, and discusses issues of international cooperation. (The paper was prepared for the UNESCO Distance Education Seminar held in Arusha, Tanzania, 24–28 September 1990.)

- 92 PERRATON, H. (1997), *The cost-effectiveness of distance education for primary teacher training* [online], Commonwealth of Learning

Available from: <http://www.col.org/consultancies/97primeteach.htm> (accessed 27.1.05)

Distance Education, Teacher Education, Primary Teachers, Costs, Cost-effectiveness

Guidelines for the planning of distance education programs for teacher training with discussion of material content, delivery models and economic and educational viability.

- 93 PERRATON, H. (2000), 'Choosing technologies for education', *Journal of Educational Media*, **25** (1), 3, pp. 31-38

Educational Technology, ICT, National Policies

A guide to the development of national policies for the use of communications technology in education, this article suggests a number of questions to help define criteria.

- 94 PERRATON, H. (2000), *Open and Distance Learning in the Developing World. Routledge Studies in Distance Education*, London, Routledge

Distance Education, Open Learning, Educational Finance, Educational Policy, Post-secondary Education, Teacher Education, Developing Countries

This book contains ten chapters describing the progress of open and distance education in developing countries (with data from, among others, Kenya, Tanzania, Zimbabwe and Nigeria). The effects, outcomes and costs of distance education programs (including teacher training) are covered in detail. Appendices include tables of cost data and an extensive bibliography.

- 95 PERRATON, H. (2001), *Teacher training in Sub-Saharan Africa – Teaching the teachers* [online], IMFUNDO, Department for International Development, KnowledgeBank Paper No 5

Available from: <http://imfundo.digitalbrain.com/imfundo/web/teach/documents/kb5/kb5.pdf> (accessed 21.1.05)

Teacher Education, Distance Education, Costs, Africa

General overview of the role of distance education in teacher training with discussion of costs, prepared for the IMFUNDO KnowledgeBank series. (The material is partly drawn from Perraton [2000] *Open and Distance Learning in the Developing World*.)

- 96 PERRATON, H. (2003), *Teacher education and training*, Cambridge, International Research Foundation for Open Learning (IRFOL), Commonwealth of Learning

Available online: http://www.col.org/irfol/2003_MODL_TeacherEd.pdf (accessed 27.1.05)

Teacher Education, Distance Education, Open Learning, Educational Policy, Costs

No 1 in the series, Models for Open and Distance Learning, this guide for policy makers focuses on the education and training of teachers, discussing areas of context, governance, aims, outcomes and costs, organization, methods, funding, and accreditation and assessment. (Some of the material is drawn from Creed [2001] and Perraton, Creed & Robinson [2002]).

- 97 PERRATON, H. & CREED, C. (2001), *Applying new technologies and cost-effective delivery systems in basic education (Thematic Study for the International Consultative Forum on Education for All, Dakar, Sénégal, 26–28 April 2000)*, Paris, UNESCO

Primary Education, Distance Education, Technology, National Policies, Educational Policy, Costs, Africa

The study summarizes international experience in using communication technologies for basic education with reference to outcomes, methods and costs. It includes costing details of teacher education projects in Kenya, Nigeria, Uganda and Tanzania.

- 98 PERRATON, H., CREED, C. & ROBINSON, B. (2002), *Teacher education guidelines: Using open and distance learning. Technology – Curriculum – Cost – Evaluation*, Paris, UNESCO

Available at: <http://unesdoc.unesco.org/images/0012/001253/125396e.pdf> (accessed 12.1.05)

Teacher Education, Distance Education, Educational Technology, ICT, Educational Policy, Educational Planning, Costs

Complementary document to *Teacher Education through Distance Learning: Technology, Curriculum, Evaluation, and Cost* (UNESCO, 2001), which summarizes case studies undertaken in Brazil, Burkina Faso, Chile, China, India, Mongolia, Nigeria, South Africa and the United Kingdom, these guidelines consider the

use of open and distance learning for teachers. Topics covered include the characteristics of programs used for teacher education, relevance of distance education, management and planning, technology choice, funding options, and means of assessment.

- 99 PERRATON, H. & HUELSMANN, T. (1998), *Planning and evaluating systems of open and distance learning*, London, DFEE (Department for Education and Employment),

Distance Education, Open Learning, Technology, Costs, Educational Planning

An Education and Training Technologies Research Report, this aims to aid the selection of technology for open learning with reference to availability, cost, access and quality; it considers organizational structures for open learning and proposes a framework for evaluating system proposals.

- 100 PERRATON, H. & LENTELL, H. (eds.) (2004) *Policy for open and distance learning*, London; New York, Routledge; Falmer

Distance Education, Open Learning, Educational Policy, Educational Planning, Technology, Costs

An international team of contributors examine aspects of policy for open and distance learning including: Resources (Hilary Perraton); Organizational models for open and distance learning (Greville Rumble and Colin Latchem); Technology (Hilary Perraton and Kurt Moses); Costs, effectiveness, efficiency: a guide for sound investment (Neil Butcher and Nicky Roberts); Framing policy for open and distance learning (Helen Lentell).

- 101 PERRATON, H. & POTASHNIK, M. (1997), *Teacher education at a distance*, Washington, DC, World Bank Human Development Department Education Group, Report No. 17457 (Education and technology series vol 2, no 2)

Available online: http://www-wds.worldbank.org/servlet/WDS_IBank_Servlet?pcont=details&eid=000009265_3980429110723 (accessed 27.1.05)

Teacher Education, Distance Education, Educational Technology, Educational Management, Costs, Developing Countries

This report explores the experience of distance education, the role of technology, and the evidence on costs and effectiveness, and suggests means to address the challenges facing teacher education in developing countries.

- 102 PERRATON, H., ROBINSON, B. & CREED, C. (2001), *Teacher education through distance learning: technology – curriculum – cost – evaluation: summary of case studies, Brazil, Burkina Faso, Chile, China, India, Mongolia, Nigeria, South Africa (two studies), United Kingdom*, Paris, UNESCO

Available online: <http://www.col.org/irfol/> (accessed 27.1.05)

Teacher Education, Distance Education, Case Studies, Brazil, Burkina Faso, Chile, China, India, Mongolia, Nigeria, South Africa, United Kingdom

A summary report of 11 case studies carried out for UNESCO to assess the uses of open and distance learning in teacher education, its effectiveness, and the methods being applied. This data is used as a basis for *Teacher education guidelines: Using open and distance learning Technology – Curriculum – Cost – Evaluation*, UNESCO, 2002.

- 103 POWER, T. (2004), 'ICT and teacher education in the Global South: Costing the benefits of learning', in *Third Pan-Commonwealth Forum on Open Learning*, 4–8 July 2004, Dunedin, New Zealand, Distance Education Association of New Zealand; Commonwealth of Learning

Available online: http://www.col.org/pcf3/Papers/PDFs/Power_Tom.pdf (accessed 27.1.05)

Teacher Education, Educational Technology, ICT, Cost-effectiveness

Drawing on the findings of the Digital Education Enhancement Project (DEEP), which uses ICT for the professional development of teachers in developing countries, the author compares the cost-effectiveness of two models of provision: state-of-the-art mobile technology, and IT suites of refurbished computers, in the attempt to determine a viable solution to the Universal Primary Education challenge of the global south.

- 104 RANDALL, C. (2003), 'Distance education for teacher development – an African perspective', *Open Learning through Distance Education*, 9 (1), Mar, pp. 26-29

Available online: <http://www.saide.org.za/resources/0000000052/March%202003.pdf> (accessed 29.1.05)

Teacher Education, Distance Education, Africa

Report of a workshop on course design for teacher development programs, held from 14–18 October 2002 in Pretoria for a group of 18 participants from nine Southern African countries. The group explored key areas (including the elements of a good distance teacher development course) and discussed ways of making teacher development programs using distance education methods work successfully in the African context.

- 105 RATHORE, H.C.S. (1997), 'Pre-service training of teachers through distance education: critical appraisal and suggestions', *Staff and Educational Development International*, 1 (1), May, pp. 47-58

Distance Education, Pre-service Teacher Education, India

A review of attitudes towards distance education in India, this article suggests means to evaluate the quality of pre-service teacher education courses provided through the distance mode.

- 106 REDDY, V. (2002), *South African College for Open Learning: a model of an inservice distance education program for initial teacher training (Multi-Site Teacher Education Research Project)*, Centre for International Education, University of Sussex Institute of Education, MUSTER Discussion Paper No 35

Available online: http://www.sussex.ac.uk/usie/muster/pdf/mpd_35_11_02.pdf (accessed 27.1.05)

Teacher Education, Distance Education, South Africa

This paper reports on a study which evaluated an initial teacher education program which is offered to 'permanent unqualified' teachers through the distance education mode at the South African College of Open Learning. Issues of cost, suitability, organization and quality of distance education in this context are discussed.

- 107 ROBERTS & ASSOCIATES (1998), *Tertiary distance learning in sub-Saharan Africa: overview and directory to programs*, ADEA Working Group on Higher Education; World Bank

Distance Education, Open Learning, Tertiary Education, Africa

An overview and directory of tertiary level distance learning programs in Africa, this report describes the current status of tertiary distance learning, drawing upon papers presented at the 11th meeting of the ADEA Working Group on Higher Education held in Saint Louis, Senegal, 20–22 October 1997. (Also available in French.)

- 108 ROBINSON, B. (1997), 'Distance Education for Primary Teacher Training in Developing Countries', in J. LYNCH, C. MODGIL & S. MODGIL (eds.) *Education and Development: Tradition and Innovation, Volume 3: Innovations in delivering primary education*, London, Cassell

Distance Education, Teacher Education, Primary Teachers, Developing Countries

An overview of distance education in developing countries with bibliography.

- 109 ROBINSON, B., LATCHEM, C.R. (eds.) (2003) *Teacher education through open and distance learning: World review of distance education and open learning v. 3*, London, Routledge Falmer

Teacher Education, Distance Education, Educational Policy, Technology, ICT, Costs, Quality

Contributors with a wide range of perspectives examine the case for the use of open and distance learning and ICT in teacher education. Topics include analysis of methods and technologies used for initial teacher training and continuing professional development, and discussion of policy making, management, technology, costing, evaluation and quality assurance.

- 110 ROBINSON, B. & MURPHY, P. (1996), *Upgrading the qualifications of serving primary teachers using distance education in Uganda: a comparative study of costs and effectiveness*, Cambridge, UK, International Extension College

Distance Education, Teacher Education, In-service Teacher Education, Primary Teachers, Costs, Uganda

This study examines the cost and effectiveness of a distance education program for in-service teacher education in Uganda.

- 111 RUMBLE, G. (1992), *The Management of Distance Learning Systems*, Paris, UNESCO International Institute for Educational Planning, Fundamentals of Educational Planning 43

Distance Education, Educational Planning, Secondary Education, Higher Education Developing Countries

This booklet analyses the main elements in the management of a distance learning system and gives guidance on the assessment and control of outcomes, with examples from developed and developing countries.

- 112 RUMBLE, G. (1997), *Costs and Economics of Open and Distance Learning*, London, Kogan Page in association with the Open University, Institute of Educational Technology

Adult Education, Distance Education, Open Learning, Educational Economics, Educational Finance, Technology, Costs, Cost-effectiveness

This book provides tools for distance education course planners to determine costs of programs and to measure their cost-effectiveness. It includes discussion of budgets, analysis of revenue costs, volume and its relationship with fixed and variable costs, capital costs, overheads, costing activity, course design, media, student support, cost-efficiency and cost-effectiveness. An extensive bibliography is attached.

- 113 RUMBLE, G. (1999), 'Cost analysis of distance learning', *Performance Improvement Quarterly*, **12** (2), pp. 122-137

Distance Education, Cost Analysis, Cost-effectiveness

This article assesses the effect of technological developments on the cost-efficiency, cost-utility, cost-effectiveness and cost-benefit of distance education institutions and systems.

- 114 RUMBLE, G. (2001), 'Just how relevant is e-education to global educational needs?', *Open Learning*, **16** (3), 10, pp. 223-232

Distance Education, Costs, International Education

This article discusses the development of e-education, which, while introducing the element of interactivity unavailable in earlier distance education programs, is also increasing the cost. The author queries the relevance of developing more expensive forms of distance education in the current climate of demand for extensive, cheap means of education.

- 115 RUMBLE, G. (2001), *Analysing Costs/Benefits for Distance Education Programs. Knowledge Series: A Topical, Start-Up Guide to Distance Education Practice and Delivery*, Vancouver, Commonwealth of Learning

Distance Education, Cost-effectiveness, Cost Estimates, Educational Media, Quality, Technology

This guide outlines the main areas for cost-analysis in distance education and items to be considered in measuring benefits.

- 116 RUMBLE, G. (2001), 'The costs and costing of networked learning', *Journal of Asynchronous Learning Networks* [online], **5** (2), Sept

Available from: <http://www.sloan-c.org/publications/jaln/v5n2/index.asp> (accessed 26.1.05)

Distance Education, Online Technology, Costs

This paper discusses the evidence on the costs of the networked learning and online courses now offered by both traditional and distance education institutions.

- 117 RUMBLE, G. (2002), 'Analysing cost/benefits for distance education programs', *TechKnowLogia*, **4** (2), Apr-Jun, pp. 60-64

Available online: <http://www.techknowlogia.org/> (accessed 18.1.05)

Distance Education, Cost Analysis, Cost Benefit

Step-by-step guide to conducting a cost/benefit analysis of distance education.

- 118 SAHOO, P. & KHAN, M. (1998), 'Inservice primary teacher training through distance education in Madhya Pradesh', *Indian Journal of Open Learning*, **7** (2)

Distance Education, Teacher Education, In-service Teacher Education, Primary Teachers, India

Article examining a distance education program for in-service teacher training in India.

- 119 SAINT, W. & CAPPER, J. (2000), *Tertiary distance education and technology in Sub-Saharan Africa*, Washington, DC, World Bank, Report no. 20992 (Education and technology technical notes series vol 5, no 1)

Teacher Education, Distance Education, Technology, Educational Management, Costs, Africa

This study provides an overview of tertiary-level distance learning, and technology experience throughout Sub-Saharan Africa. It considers the potential of distance learning, complemented by a selective application of information and communication technologies, to resolve the dilemma, faced by developing countries with limited funding, of widening access to education.

- 120 SCHOOLNET AFRICA, OPEN SOCIETY INITIATIVE FOR SOUTHERN AFRICA, COMMONWEALTH OF LEARNING & INTERNATIONAL INSTITUTE FOR COMMUNICATION AND DEVELOPMENT (2004), *Towards a strategy on developing African teacher capabilities in the use of information and communication technology (ICT)* [online]

Available from:

http://www.schoolnetafrika.net/fileadmin/resources/Towards_a_strategy_on_developing_African_Teacher_Capabilities_in_use_of_ICTs_-_Oct_01.pdf (accessed 26.1.05)

Teacher Education, ICT Training, Costs

An extensive examination of teacher training in information and communication technology (ICT) in African countries at both the pre-service and in-service levels, this report summarizes a large volume of research in describing the current situation in Africa with respect to the development of teacher capability in the use of ICT. It deals with the costs of integrating ICT capability into teacher training and offers recommendations for the systematization of this development through the design of strategic frameworks.

- 121 SHRESTHA, G. (1997), *A review of case studies related to distance education in developing countries* [online], United Nations IT for Development Program

Available from: <http://www.undp.org/info21/public/review/pb-rev.html> (accessed 21.1.05)

Distance Education, Teacher Education, Developing Countries

This paper describes developing countries' experiences with distance education in terms of a group of select case studies conducted in a number of countries. These include teacher training in Kenya, teacher preparation in Tanzania and pre-service teacher education in Zimbabwe.

- 122 SHRESTHA, G. (1997), *Distance Education in Developing Countries* [online], United Nations IT for Development Program

Available from: <http://www.undp.org/info21/public/distance/pb-dis.html> (accessed 21.1.05)

Distance Education, Teacher Education, Technology, Costs, Developing Countries

This paper focuses on general developments in the area of primary and secondary education, and teacher education, and provides an overview of development, technology and costs.

- 123 SHRESTHA, G. (2000), *The utilisation of information and communications technology for education in Africa*, Addis Ababa, IICBA

Technology, ICT, Teacher Education, Curriculum Development, Africa

A report describing the application of technology to education programs in Africa.

- 124 SIMARD, C., LOPEZ, D. & FOFANA, S.C. (1998), *Improving Open and Distance Learning (ODL) Initiatives Through the Internet in Developing Countries: The Case of CIFFAD (International Francophone Consortium of Distance and Open Learning Institutions)* [online], Internet Society

Available from: http://www.isoc.org/inet98/proceedings/4b/4b_2.htm (accessed 29.1.05)

Distance Education, Open Learning, Technology, Internet, Policy, Developing Countries

Discussion of a methodology for the implementation of open and distance learning Internet-based projects in developing countries from the perspective of the International Francophone Consortium.

- 125 SOUTH AFRICAN INSTITUTE FOR DISTANCE EDUCATION (1995), *Teacher education offered at a distance*, SAIDE

Teacher Education, Distance Education, South Africa

A national report prepared as part of an audit of teacher education across the country, this contains general discussion of distance education issues in South Africa.

- 126 SOUTH AFRICAN INSTITUTE FOR DISTANCE EDUCATION (1999), *An overview of distance education initiatives and the use of technology in Malawi*, SAIDE

Distance Education, Technology, ICT, Malawi

An introduction to the use of distance learning technology and provision of distance education programs in Malawi in 1999.

- 127 SOUTH AFRICAN INSTITUTE FOR DISTANCE EDUCATION (2004), *Distance education and open learning in Sub-Saharan Africa: criteria and conditions for quality and critical success factors: A survey of policy and practice*, Commonwealth of Learning; ADEA Working Group on Distance Education and Open Learning

Available online: http://www.col.org/Consultancies/04DEinSSA_CriteriaforQuality.pdf (accessed 27.1.05)

Distance Education, Open Learning, Quality, Africa

One of two 'Surveys of Policy and Practice', published in 2004, undertaken on behalf of the Commonwealth of Learning and the Association for the Development of Education in Africa (ADEA) Working Group on Distance Education and Open Learning, this report identifies criteria and conditions for quality and critical success factors and features a number of case studies. (Follows on from an earlier COL-SAIDE report: *Distance education and open learning in Sub-Saharan Africa – A literature survey on policy and practice* [2002].)

- 128 SOUTH AFRICAN INSTITUTE FOR DISTANCE EDUCATION (2004), *Costing distance education and open learning in Sub-Saharan Africa: A survey of policy and practice*, Commonwealth of Learning; ADEA Working Group on Distance Education and Open Learning

Available online: <http://www.col.org/Consultancies/04CostingDEinSSA.pdf> (accessed 27.1.05)

Distance Education, Open Learning, Costs, Costing, Africa

One of two 'Surveys of Policy and Practice', published in 2004, undertaken on behalf of the Commonwealth of Learning and the Association for the Development of Education in Africa (ADEA) Working Group on Distance Education and Open Learning, this report provides a costing tool for distance education programs. (Follows on from an earlier COL-SAIDE report: *Distance education and open learning in Sub-Saharan Africa – A literature survey on policy and practice* [2002].)

- 129 SWALES, C. (2002), 'Distance teacher education program, National Teacher Training College, Lesotho: a case study in overcoming adversity', *Staff and Educational Development International*, 6 (2), Sept, pp. 159-168

Distance Education, Teacher Education, Lesotho

This paper describes the Distance Teacher Education Program (DTEP) designed to upgrade under- and unqualified primary school teachers in Lesotho to diploma level.

- 130 TATE, O. (1991), *Distance Education in Zambia. A Report on a Consultancy*, Vancouver, Commonwealth of Learning

Distance Education, Educational Policy, Secondary Education, Teacher Education, Developing Countries, Zambia

This report assesses the role of distance education in Zambia's national development and reviews the agencies involved. Suggestions are made to assist the development of distance education and improve provision.

- 131 TATTO, M.T. (1991), *Comparing the Effects and Costs of Different Approaches for Educating Primary School Teachers: the Case of Sri Lanka*, Washington, DC, Agency for International Development (IDCA), Bureau of Science and Technology, BRIDGES Research Report Series No 10

Primary Education, Higher Education, Teacher Education, Distance Education, Cost-effectiveness, Developing Countries, Sri Lanka

This study, conducted by the Basic Research and Implementation in Developing Education Systems (BRIDGES) project at Harvard University, examines pre-service and in-service primary teacher training in Sri Lanka by evaluation of best use, effectiveness, and costs of the three models: (1) Colleges of Education; (2) Teachers' Colleges; and (3) Distance Education. An executive summary outlines data on which this study is based, presents findings, and discusses policy implications for increasing the quality of education in developing countries.

- 132 TATTO, M.T., NIELSEN, H.D., CUMMINGS, W., KULARATNA, N.G. & DHARMADASA, K.H. (1993), 'Comparing the effectiveness and costs of different approaches for educating primary-school teachers in Sri Lanka', *Teaching and Teacher Education*, **9** (1), Feb, pp. 41-64

Primary Teachers, Teacher Education, Cost-effectiveness, Sri Lanka

This article (based on the findings of the BRIDGES report) examines the effectiveness and costs of three approaches to teacher education in Sri Lanka – pre-service, conventional in-service, and distance in-service.

- 133 THOMAS, A.R., JAMES, S., AYELE, S. & JOHNSON, H. (2003), *Distance Education and Training Projects and Programs in Africa*, ICLEI – Local Governments for Sustainability, International Training Centre

Available online: <http://www.editosia.org/docs/wp3-1.pdf> (accessed 21.1.05)

Distance Education, Program Evaluation, Africa

While the main focus of the EDITOSIA project is an inventory of electronic distance training projects and programs on sustainable development for local government, this report aims to include a review of all distance education and learning programs in ten countries in Sub-Saharan Africa and discusses the factors underlying their success and failure.

- 134 UNESCO (1998), *World Education Report: Teachers and Teaching in a Changing World*, Paris, UNESCO

Teacher Education, Teachers, International Policy, National Policies, Educational Policy, Technology, Developing Countries

A global review of the status of teachers, educational developments and policy, this report discusses the problems faced by developing countries and the challenges posed by the introduction into education of new information and communication technologies.

- 135 UNESCO (2002), *Open and distance learning: trends, policy and strategy considerations*, Paris, UNESCO

Distance Education, Open Learning, Educational Policy, Costs, Teacher Education, Higher Education, Africa, Arab States, Asia and the Pacific, Oceania, Europe, Latin America

A global review of open and distance learning identifying UNESCO initiatives and suggesting policy and strategy considerations, this report examines concepts (including teacher education) and reviews regional trends (including Africa). A section on economics discusses factors affecting the cost of programs and the cost-efficiency of open and distance learning.

- 136 UNIVERSITY OF THE WEST INDIES & COMMONWEALTH OF LEARNING (2001), 'Distance Education in Small States', in *Proceedings of the University of the West Indies Small States Conference*, 27–28 July 2000, Ocho Rios, Jamaica, The University of the West Indies; Commonwealth of Learning

Available online: http://www.col.org/resources/publications/SmallStates00/2_conf_proc_master.pdf (accessed 26.1.05)

Distance Education, Developing Countries

In response to the educational development challenges facing the countries of the Caribbean and other small states around the world, this conference sought to discuss some solutions including distance learning and the use of multiple delivery modes. Ten topics relating to the theme of distance education include online distance education and teacher education together with some case studies.

- 137 VALERIEN, J., GUIDON, J., WALLET, J. & BRUNSWIC, E. (2003), *Distance education and open learning in Sub-Saharan Africa. The situation in francophone countries*, (in French: *Enseignement à distance et apprentissage libre en Afrique subsaharienne. Etat des lieux dans les pays francophones*), ADEA (Association pour le développement de l'éducation en Afrique); Working Group on Distance Learning (Groupe de travail de l'ADEA sur l'enseignement à distance)

Available online: http://www.adeanet.org/publications/docs_fr/enseign_distance_12092002.pdf (accessed 21.1.05)

Distance Education, Open Learning, Africa, Francophone Countries

This report examines the use of distance education and open learning programs in Francophone areas of Africa and includes a bibliography, list of websites and details of significant organizations.

- 138 VERSPOOR, A., MATTIMORE, A. & WATT, P. (2001), *A chance to learn: knowledge and finance for education in Sub-Saharan Africa*, Washington, DC, World Bank, Africa Region Human Development Series, No 1

Available online: http://www-wds.worldbank.org/servlet/WDS_IBank_Servlet?pcont=details&eid=000094946_01032905304794 (accessed 17.1.05)

Educational Provision, Educational Finance, Educational Policy, Africa

A general review of the current challenges of education provision in Sub-Saharan Africa, this report proposes a strategy and a program of action for the World Bank's Africa Region, in their efforts to accelerate development.

- 139 WAGHID, Y. (1996), 'Can distance education engender effective teacher education in South Africa?', *South African Journal of Education*, **16** (4), 11, pp. 205-209

Distance Education, Teacher Education, South Africa

This article studies the link between distance education and teacher education in South Africa. It includes a description of distance education; the role of UNISA as a major distance education provider and discusses some of the issues relating to the changing South African educational and political context.

- 140 WILLIAMS, P.J. (2001), 'Upgrading technology teachers by distance', in *Papers of the Australian Association for Research in Education (AARE) Conference*, 2–6 December 2001, Fremantle, AARE, Melbourne

Available online: <http://www.aare.edu.au/01pap/wil01233.htm> (accessed 10.1.05)

Teacher Education, Technology, Developing Countries, Mauritius, Botswana, Seychelles

This paper describes an approach based on a mixed mode of delivery (distance and on-site) which has been developed and implemented in a number of countries to meet the need for technology training in higher and teacher education. The principles of course design and some of the issues of course delivery are discussed.

- 141 WORT, M. (1998), *Distance education and the training of primary school teachers in Tanzania*, Uppsala, Sweden, Uppsala University Library

Distance Education, Teacher Education, Primary Teachers, Tanzania

This study reviews the history of distance education in Tanzania, with analysis of two major distance teacher education programs for primary school teachers.

- 142 WRIGHTSON, T. (1998), *Distance education in action: the Northern Integrated Teacher Education Project in Uganda*, Cambridge, UK, International Extension College

Distance Education, Teacher Education, Uganda

Case study describing the Northern Integrated Teacher Education Project, Uganda, run from 1993 to 1997 in conjunction with the International Extension College, Cambridge, which used open and distance learning methods for teacher education.

- 143 WYNGAARD, A. (2002), 'The contributing factor of distance education in the upgrading of qualifications for in-service teachers', in *PAN-Commonwealth Forum on Open Learning*, 29 July–2 August 2002, Durban, South Africa, Commonwealth of Learning

Available online: <http://www.col.org/pcf2/Content%20page%20-%20Abstract%20booklet.doc#W1> (accessed 19.1.05)

Distance Education, Teacher Education, In-service Teacher Education, South Africa

An analysis of the success of various South African programs for the upgrading of in-service teacher qualifications, with notes on technology and cost.

- 144 YATES, C. (2000), *Teacher education at a distance: lessons and experience from Sub-Saharan Africa*, Cambridge, UK, International Extension College

Available online: http://www.iec.ac.uk/resources/c_yates_paper_1.pdf (accessed 20.1.05)

Teacher Education, Distance Education, Costs, Quality, Africa

Evaluation of distance teacher education projects in terms of cost-efficiency and quality.

- 145 ZVACEK, S.M. (1996), 'Distance Education in the Teacher Education Program of Zimbabwe', in *Papers presented to the Annual Conference of the Association for Educational Communications and Technology*, Iowa, Association for Educational Communications and Technology

Distance Education, Teacher Education, Zimbabwe

This reports describes the Teacher Education Program in Zimbabwe, identifies major strengths and weaknesses, and makes recommendations including encouraging a more active role for the University of Zimbabwe.