

*FAST-TRACK TEACHER TRAINING:
MODELS FOR CONSIDERATION
FOR SOUTHERN SUDAN*

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ACRONYMS

ADEA	Association for the Development of Education in Africa
AIR	American Institutes for Research
BAC	Baccalaureat: Secondary school-leaving exam for countries with the Francophone education system
BEPC	Brevet d'etudes du premier cycle - the junior secondary leaving exam in Francophone education systems
BRAC	Bangladesh Rural Advancement Committee
CC	Coordinating Centers, TDMS program, Uganda
CCT	Coordinating Center Tutor, TDMS program, Uganda
CEC	County Education Centers
EFA	Education for All
EPRC	Education Policy Review Commission, Uganda
ESN	Education Support Network, SBEP, Southern Sudan
FIMG	Formation Initiale des Maîtres en Guinée (Guinean Initial Teacher Training Program)
FPE	Free Primary Education
FQEL	Fundamental Quality and Equity Levels Projet, Guinea/Conakry, 1998-2005 (NFQE in French)
GTZ	Gesellschaft für Technische Zusammenarbeit
IDA	International Development Association, a program of the World Bank that provides interest-free loans and grants for programs aimed at boosting economic growth and improving living conditions in poor countries
IEL	Improved Efficiency of Learning
IRI	Interactive Radio Instruction
JCE	Junior Certificate of Education, Malawi
MES	Ministry of Education and Sports, Uganda
MIITEP	Malawi Integrated In-Service Teacher Education Program
MoE	Ministry of Education
MSCE	Malawi School Certificate of Education
NCE	Nigeria Certificate of Education
NGO	Nongovernmental Organization
NITEP	Northern Integrated Teacher Education Project
OLSET	Open Learning Systems Education Trust, South Africa
PASE	Programme d'Ajustement Sectoriel d'Education, Guinea

PASEC	Programme d'analyse des systèmes éducatifs de la CONFEMEN
PEA	Primary Education Advisor, MIITEP program, Malawi
PERP	Primary Education Reform Program, Uganda
PETDP	Primary Education and Teacher Development Project, Uganda
PTC	Primary Teachers' College, Uganda
PTE	Primary Teacher Education, TDMS program Uganda
PTTP	Pivotal Teacher Training Program, Nigeria
SBEP	Sudan Basic Education Program
SIMS	Structured Instructional Materials, Basic Education Support Project, Namibia
SoE	Secretariat of Education (Southern Sudan)
SSA	Sub-Saharan Africa
TDMS	Teacher Development and Management System
TDU	Teacher Development Unit, MIITEP program, Malawi
TPR	Teacher-Pupil Ratio
TTI	Teacher Training Institute
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNICEF	United Nations Children's Fund
UPE	Universal Primary Education
USAID	United States Agency for International Development
ZINTEC	Zimbabwe Integrated Teacher Education Course

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EXECUTIVE SUMMARY

Southern Sudan is emerging from over 21 years of civil war during which time entire systems and infrastructure were significantly damaged or destroyed altogether. The education sector was not spared these setbacks, and now the country is faced with the massive task of reconstructing its entire school system. This situation presents both a challenge and an opportunity to Southern Sudanese educators and decision makers as they attempt to achieve universal primary enrollment in the years ahead while ensuring the provision of an adequate number of trained and qualified teachers to meet these enrollment demands.

This paper was developed as a desk study of “fast-track teacher training programs” for the USAID-funded Sudan Basic Education Program in order to provide educators and decision makers with information needed to plan for this important stage in Southern Sudan’s development. This consultant worked for several weeks in the US in April 2005 gathering information from library and documentary sources, the world wide web, and a number of individuals who kindly assisted by telephone or email in the provision of information, documents and ideas for this report. He then traveled to Southern Sudan and Kenya in May 2005 where he interviewed project personnel and presented preliminary results to the Commissioner of Education, Mr. Kosti Manibe, representatives from SBEP, USAID and NGO education partners.

The paper begins with an overview of key concepts surrounding teacher training – its definition, the different modes of training currently in practice around the world, and larger aims of producing teachers not only equipped with basic skills but also with the capacity to continue developing as professionals. The paper then discusses key issues and trends in teacher training, both in the literature and in practice, in particular the changing role of pre-service teacher training, the merging of pre-service and in-service modes, and the increasingly significant role played by distance education in teacher preparation.

Next, the paper presents a brief overview of 5 alternatives to conventional pre-service programs in order to provide decision-makers with information concerning the options that are available to them and the conditions under which those options might be considered. These alternative models include crash training programs, distance education models, mixed-mode models, local recruitment models and structured materials models.

In the next section, the paper examines three programs in greater depth, each of which was selected because documentation was sufficient for some in-depth description and analysis, because of the relevance of each program to the Southern Sudanese context, and because each program contained important lessons for the development of future teacher training programs in Southern Sudan. These programs are the Malawi Integrated In-Service Teacher Education Program (MIITEP) program in Malawi, the Teacher Development and Management System (TDMS) program in Uganda and the Formation Initiale des Maitres en Guinée (FIMG) program in Guinea.

Following a discussion of these programs, several observations are made summarizing what we know about teacher education needs in Sudan, and based on the assumption that a variety of training models will be necessary if targets are to be met, three key considerations are listed for educational planners, as follows:

1. **Assess the potential teacher pool for Southern Sudan**, including secondary school leavers and P8 graduates from within Sudan, returned Sudanese nationals, either from the diaspora or from refugee camps, and volunteer or contractual teachers from outside of Southern Sudan.
2. **Assess the feasibility of developing a specialization for lower primary and upper primary** in order to better prepare teachers for the conditions they will face in Southern Sudanese schools.
3. **Devise a short- and medium-term strategy for recruiting and training teachers** while keeping in mind numeric targets on the one hand and level specialization on the other. In the short term, a combination of the 5 models discussed in the paper is proposed, and an implementation table with phased numbers through the year 2010 is provided as an example of how planning might be carried out.

A final reflection: Teacher training has undergone significant changes in the last 20 years around the world, largely due to conditions that are similar to those found in Southern Sudan. While each country has its own unique characteristics, most countries around the world, including many industrialized ones, are faced with the challenge of recruiting, training and retaining sufficient numbers of teachers to staff a growing number of institutions while at the same time ensuring a high level of quality at a reasonable cost. Thus, while the exact combination of strategies will vary from country to country, the general nature of the challenge is the same.

In the case of Southern Sudan, it seems to this consultant that two considerations are key: flexibility and investment. Decision makers' flexibility in considering different training delivery modes will determine the extent to which training programs are able to meet the numeric targets necessary for Universal Primary Enrollment while ensuring a respectable level of quality in training at reasonable cost. Put more simply, while institutional pre-service training can remain part of the mix, significant importance must be placed on alternative modes of training if an expanded program is to be realized.

The second consideration, related to the first, concerns investment. If the best-laid plans of decision makers are often sabotaged by lack of funding, the risk is even greater with decentralized forms of teacher training, for as we have seen, the mere fact that outreach centers and tutorial systems are established does not guarantee their proper functioning, let alone their success. If a commitment is not made both to the design and to the financing of various teacher training mechanisms, then even the most enlightened plan will fail.

In particular, it seems to this consultant that significant investment in the Education Support Network and the infrastructure through which it is delivered, from the CECs to the training and support of tutors to the quality and continuity of curriculum materials, is at the core of any successful plan to expand Southern Sudan's teacher training system. Whether decision makers choose to adopt one or more of the alternative modes described in this paper, their success will depend on the solidity of the ESN system and its ability to accommodate the different kinds of inputs needed in the years ahead. Relying solely on the TTIs or other mechanisms (such as the good will of NGOs and other education partners) to provide the basis for such an expansion will not suffice. And as the international research shows, the ability to deliver training as close to the school as possible will make the difference between more "training as usual" and training that is relevant, cost-effective and, in the end, optimal for the people of Southern Sudan.

INTRODUCTION

Three out of every four children in Southern Sudan are not in school. Those who are in school are taught by teachers who might have completed secondary school, primary school or even less. Their teachers might have been trained in a Teacher Training Institution in Southern Sudan, though it is more likely that they were trained in Uganda or Kenya, if they were trained at all. Yet in the years ahead, the leaders of Southern Sudan are determined to ensure that all their children are in school and are being taught by qualified and competent teachers.

This is a daunting task. Where will these teachers come from? Emerging from over 21 years of civil war, the people of Southern Sudan have been more preoccupied with survival than with preparing the next generation of teachers. Yet peace is now upon them, and it is time to begin building a new education system. Where will they begin? By building classrooms? Producing textbooks? Graduating students? Training teachers? The answer, of course, is all of these things, and still that will not be enough.

The Sudan Basic Education Program (SBEP), funded by USAID, has been operating in Southern Sudan since 2002 in order to assist the Sudanese people to build a new education system by constructing schools, developing curricula, materials and teacher training systems, and initiating programs that provide access to school for girls, accelerated learning courses for all who have missed school, and nonformal learning opportunities for parents and community members.

In particular, the American Institutes for Research (AIR), a subcontractor on the SBEP project, is responsible for assisting the Southern Sudanese Secretariat of Education with the development of teacher training systems, curricula and materials. As part of that mandate, AIR has begun helping the SoE project the number of teachers that will be needed in the years ahead, as well as developing strategies for identifying and training these teachers. From this work it has become clear that if the SoE's goal of ensuring a minimum of 52 percent gross enrollment rate by 2010 is to be met, some two to three thousand teachers per year must be trained. How will this demand be met?

Southern Sudan already has a network of Regional Teacher Training Institutes (TTIs), though most have been destroyed or fallen into disrepair during the war. The SoE, with assistance from the SBEP project and other partners, have also developed a system of County Education Centers (CECs) and an Education Support Network through which its nascent in-service teacher training program will be delivered; to date only a few are operational. But even when the TTIs and CECs are fully functional, they will not be able to provide enough teachers to meet the SoE's 2010 targets, much less beyond.

It is against this backdrop that AIR asked this consultant to conduct a desk study of "fast-track teacher training programs" from around the world, particularly Africa, that might serve as examples of strategies to consider in Southern Sudan in order to increase the production of teachers in the years ahead. This consultant worked for two weeks in the US gathering information from library and documentary sources, the world wide web, and a number of individuals who kindly assisted by telephone or email in the provision of information, documents and ideas for this report. He then traveled to Southern Sudan and Kenya where he was able to interview project personnel and present preliminary results to the Commissioner of Education, Mr. Kostis Manibe, representatives from SBEP, USAID and NGO education partners.

Because this is a desk study, it is a work in progress. Some information is dated and programs described herein perhaps are no longer being implemented. Moreover, because the author was not able to collect data first-hand, information is presented as it was available through existing sources, albeit uneven. Thus, some descriptions lack evaluation information, others lack cost data. In spite of these gaps, every effort was made to present the information in as uniform and coherent a manner as possible. Efforts were also made to find examples of fast-track teacher training programs that might serve as relevant models for the case of Southern Sudan. For that reason, more examples were drawn from Africa than other parts of the world.

The author sincerely hopes that this paper provides useful information to the decision makers who are embarking on the important and difficult task of finding the best road, or roads, to follow in order to expand Southern Sudan's teacher force for the years ahead. Where it fails to do so, it is no reflection on the individuals who kindly gave their time to assist with the development of this paper.

BACKGROUND

Since the declaration of Education for All (EFA) at Jomtien in 1990, the number of children enrolled in primary schools in developing countries has increased significantly. Between 1990 and 1995, the total primary school enrollment in sub-Saharan Africa expanded by some 10.4 million, an increase of 17 percent in five years, reaching 72.3 million pupils in 1995 (UNESCO 1996: 27). During the same period, the share of female primary school teachers increased to over 50 percent for the developing world as a whole. In Latin America and the Caribbean, the percentage of women teachers reached 75 percent. Given the positive relationship between female teachers and girls' enrolment and learning achievement, this trend is encouraging (Ibid: 19).

Yet the EFA picture is mixed. While student enrolment has increased by 17 percent, the number of teachers being trained has only grown by 12 percent, resulting in higher pupil/teacher ratios worldwide - 45.4 pupils per teacher on a regional basis, actually decreasing in 17 countries while rising dramatically in seven others: Benin, Central African Republic, Congo, Guinea, Guinea-Bissau, Mali, and Tanzania (UNESCO 1996: 27). Moreover, though women teachers have gained ground worldwide, regional proportions vary significantly, the lowest being in sub-Saharan Africa at 39 percent and South Asia at 37 percent. It should be no surprise that the greatest difficulties encountered in increasing girls' school attendance occur in these two regions (Ibid: 20).¹ Globally, more male teachers are qualified than female teachers, except in Nigeria, where the number of qualified males is actually falling due to poor conditions of service. And the highest numbers of uncertified teachers are found in the rural areas (UNESCO 2000: 48).

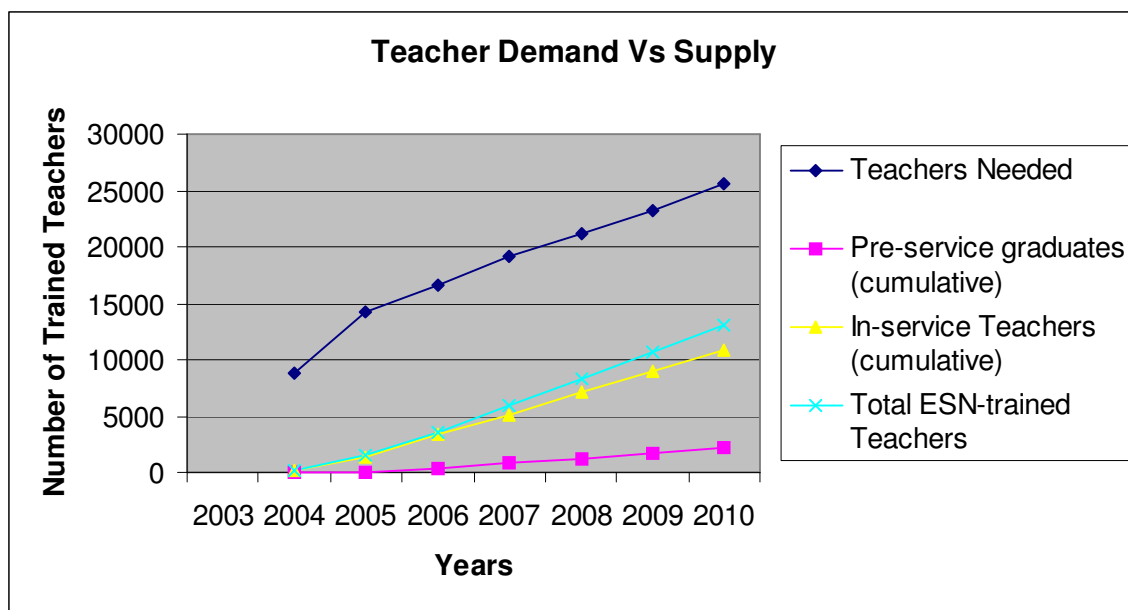
If these trends continue, there is reason to fear that the EFA goal of universal enrollment by 2015 may not be met. According to the EFA Global Monitoring report of 2002, the additional number of primary teachers needed by 2015 could range from 15 to 35 million,

¹ Once enrolled, do girls or boys "survive" in school longer? According to UNESCO, the available data cover only about half of the developing countries, and the evidence is somewhat mixed. However, generally speaking, about the same percentage of boys and girls reach Grade 4 except in Latin America and the Caribbean, where the survival rate of girls exceeds that of boys by almost 7 percentage points (UNESCO 1996: 20).

representing an increase of between 6 and 14 percent from the mid-1990s figures. The areas of greatest need can be found in Sub-Saharan Africa (SSA) and South and West Asia where the largest number of children out-of school can be found. And in SSA, the magnitude of need varies from about a 25 percent increase from current figures in countries like Angola, Gabon, Lesotho, and Uganda, to more than a 75 percent increase in countries like Burkina Faso, Chad, Djibouti, Malawi and Niger (Nilsson 2003, cited in Yael 2004: 1).

In Sudan, the need is even greater: according to projections made by the Southern Sudan Secretariat of Education, more than 27,000 trained primary school teachers will be needed by 2010 just to reach a gross enrollment rate of 52 percent, assuming a Teacher-Pupil Ratio of 1:50.² The following graph illustrates the number of teachers being trained each year under Southern Sudan’s current training programs, including projections on the Education Support Network (ESN) through which the Southern Sudan In-Service Teacher Training Program is being delivered, and the number of teachers needed based on enrollment projections:³

Figure 1: Teacher Demand vs. Supply in Southern Sudan



Source: SBEP, Melican 2004.

We will return to the question of teacher provision in Southern Sudan later in this paper. For now, two points deserve our attention. First, training and retaining teachers is a difficult business anywhere in the world; teacher training and retention is even more

² *The Education Sector Plan of South Sudan, Nuba Mountains and Southern Blue Nile. Strategic Plan for The Pre-Interim and Interim Periods* (July 2004 to December 2010). Secretariat of Education, Civil Authority of New Sudan, The People’s Liberation Movement; cited in Melican (2004).

³ Projections made by the Sudan Basic Education Program using SoE and other data. According to Melican (2004), this is a rough analysis of the demand for teachers in Southern Sudan from 2003 – 2010. It is based on SoE sector plans which show GER for primary school children rising from 21 percent in 2004 to 52 percent in 2010, and a Teacher-Pupil Ratio of 1:50. Attrition rates are not factored in but crude drop-out rates from programs are part of the projection. Cohorts of 40 students are used in most in-service and pre-service intakes (p. 15).

difficult to achieve in SSA where resources are limited and living and working conditions are more difficult. In countries suffering from wars, conflicts or the HIV/AIDS pandemic, conditions are even more difficult. During Sierra Leone's 11-year civil war, teachers were targeted and murdered, and thousands fled the country. During the 1994 genocide in Rwanda, more than 60 percent of the teachers were killed or fled (UNESCO, 1996). In countries such as Zambia, output from teacher training colleges cannot even replace teachers who are lost to AIDs. Many of the most experienced professionals, including head teachers, managers, planners and inspectors, are dying. The profile of staff is changing; most are younger and less experienced than before, and productivity is lower because of the large numbers of sick and absent staff (World Bank, 2001). These conditions serve as cautions to planners in throughout Southern Sudan where identifying, recruiting, training and keeping teachers will not be easy work.

The second point that deserves our attention is the fact that worldwide, conventional pre-service models of teacher training are losing ground in their ability to provide teachers quickly enough to meet EFA targets. Typically in any given country, pre-service training:

- produces several hundred teachers per year, whereas several thousand are often needed
- delays the deployment of teachers to full-time teaching positions for 1-5 years, whereas due to EFA pressures, they are needed in schools immediately
- costs much more per student than alternative teacher training models
- restricts the recruitment of candidates to junior or senior school leavers who are able to spend 2-4 years living in a regional center, thereby reducing the pool of potential candidates who are unable to meet these conditions
- produces teachers that are often no better trained than ones in alternative programs.

We will return to each of these points later in the paper, but the point here is that the people of Southern Sudan are faced with a double-edged problem: **while recruiting and training teachers will be difficult on the one hand, relying on traditional forms of teacher training will of itself not produce the number of teachers required on the other.**

The purpose of this paper is to explore a variety of "fast-track" teacher training models that have been proven to work in different parts of the world as a means of rapidly increasing the number of trained teachers in the education system. For this paper, fast-track teacher training models are defined as *ones that are capable of training greater numbers of teachers and placing them in schools more quickly than conventional programs.* Typically, these programs also provide training that is *more practical and lower in cost* than conventional programs.

First, we will first examine the question: What is teacher training? Pre-service and in-service modes will be discussed and trends in their application will be identified. Next, we will examine 5 of the most typical models of fast-track teacher training programs: crash programs, distance education models, mixed-mode models, local recruitment models and structured materials models. We will then examine three successful fast-track teacher training models in more depth: the Malawi Integrated In-Service Teacher Education Program (MIITEP) program in Malawi, the Teacher Development and Management System (TDMS) program in Uganda and the Formation Initiale des Maîtres en Guinée (FIMG) program in Guinea. These programs were selected because of their relevance to the Southern Sudanese context as well as their potential for providing important lessons about what to consider and, perhaps more importantly, what to avoid in the design of a

Southern Sudanese teacher training system. Next, we will consider lessons learned from the models discussed in this paper, including recommendations from the international literature. Finally, we will discuss specific recommendations for the case of Southern Sudan.

WHAT IS TEACHER TRAINING?

What is teacher training? Briefly, it is a program that helps teachers develop the knowledge, skills and attitudes they need to teach competently in their own classroom. The concept has changed over the years, from on-the-job training to training by religious orders to government-based training in “normal schools” to teachers colleges and finally, to university faculties, schools and departments of education (Husen & Postlethwaite 1994: 6038). In time, the term *teacher training* came to be used in developing countries to encompass teacher preparation in the pre-service mode, and teacher upgrading (skills and/or qualifications) the in-service teacher mode. In industrialized countries, however, “training” tends to connote a more restricted kind of education “focused on specific outcomes achieved through a sequence of steps, within a specific period of time. It is based on the assumption that through mastery of discrete skills, teachers will be effective in the classroom” (Freeman 1989:39). Some critics even view the concept of “training” as limiting, such as how we would teach a dog to roll over. Lucas (1988), for example, argues that teacher training involves giving novices and experienced teachers alike “ready-made answers” as opposed to “allowing them to discover their own alternatives” (p. 42). Irvine-Niakaris and Bacigal (1992) note that “training” means that a trainee passively undergoes a period of conditioning during which the “dos” and the “don’ts” of classroom practice are inculcated. Then, “only after this basic training does the teacher trainer become concerned about empowering trainees to become agents in their own development, much in the same way that the scales must be mastered before a would-be pianist is able to interpret a sonata” (cited in Tenjoh-Okwen, 1996: 42). Similarly, Davis and Plumb (1988) pit teacher training and teacher education at opposite ends of a continuum. Where training represents a pre-planned agenda set by the workplace or syllabus, education represents an impromptu, flexible agenda set by groups. Where training implies the needs of the workplace, education implies personal needs. Where training leads to qualification, education leads to career development. Training relies on leader and experts, education on peer groups. And where training leads to standardization, education leads to innovation (p. 40).

Instead of teacher training, then, “teacher education” is more often used in industrialized countries. Tatto (1997) provides a definition: teacher education refers to “formally organized attempts to provide more knowledge, skills and dispositions to prospective or experienced teachers” (in Cummings & McGinn 1997: 213). Thus, teacher education refers to (1) pre-service as well as in-service preparation and (2) a variety of ways of bringing about learning (“formally organized attempts”) rather than simply the inculcation of skills that the word “training” invokes for some. Cummings & McGinn concur that as with schooling, teacher education has moved from the “transmission model” to one which emphasizes thought processes:

In most developing countries, schooling is characterized as using a “transmission model” where teaching is telling, and learning is “absorption.”... During the past 25 years there has been a major shift in thinking about the concept of knowledge and the processes of teaching and learning. These shifts are reflected in theories of how

people learn to teach. Theories based on constructivist, cognitive, and developmental foundations argue that emphasis in teacher education should be placed on thought processes more than on specific practices (Ibid: 213).

Finally, a concept that is even broader than teacher education is “teacher development,” a continuous process that begins with pre-service teacher preparation and spans the entire career of the teacher (Sithamparam and Dhamotharam 1992).

Whether we call it teacher training, preparation, education or development, it is ultimately the purpose of these programs that makes them similar – that is, to ensure that teachers have the knowledge, skills and attitudes or dispositions they need to teach well, and to continue to teach better as they evolve in their profession. For the purposes of this paper, we will use the term teacher training to encompass all of the ideas described above, understanding that each program must be examined on its own merits in order to determine the extent to which promotes skills transfer and/or the development of thought processes.

In fact, when talking about *teacher training* throughout the developing world, the distinction is often moot, for it has been the experience of this author that when most people the developing world talk of teacher training, they are referring to one of two “modes” of training: pre-service or in-service. It is to this distinction that we will now turn.

Pre-service teacher training

Structure

In pre-service training programs – what Kachelhoffer (1995) calls “the more or less status quo model” – primary school teachers are typically trained over a 3 to 4 year period at a residential teachers’ college or in a university program. Darling-Hammond and Cobb (1995) describe the three most common pre-service models:

- *Certificate or degree programs housed in normal colleges, normal schools, and colleges of education established solely for the purpose of training teachers.* These programs usually specialize in training primary school teachers and emphasize pedagogical more than subject area preparation. These programs tend to be two to four year programs that lead to a certificate or diploma in teaching, such as the case of Botswana.
- *Degree programs housed at general, multipurpose universities.* These programs usually emphasize subject matter preparation more than pedagogical preparation. These are generally three- or four-year programs leading to a bachelor's degree, with the teaching preparation portion lasting one to two years (such as the case of Namibia).
- *Master's degree and/or fifth year programs.* These programs, open to candidates who have completed a bachelor's degree, lead to a master's degree or postgraduate diploma in education (such as the M.Ed. program in Botswana). The duration of these programs ranges from one to two years beyond the bachelor's degree (cited in Craig, Kraft & Du Plessis 1998: 58-9).

Though most pre-service teacher training fall into one of these three types of programs, variations abound. In fact, pre-service programs vary dramatically around the world in terms of institutional context, content areas, time allocation and forms of practical experiences for the students (Ben-Peretz 1995). For example, initial preparation can vary from zero to five years and increasingly, pre-service teachers spend more and more on

practicum sites (UNESCO 2004). Durations for supervised practice teaching varies from 2 weeks (Japan secondary schools), to 4 weeks (Japan and New Zealand primary schools), to as much as a full year (Belgium, France, Germany, Luxembourg, Chinese Taipei) (Villegas-Reimers 2003). In Cuba, *all* pre-service training is school-based (UNESCO 2004). And numerous countries consider part or all of secondary school, often with teacher preparation courses mixed in with normal academic studies, as preparation for primary school teaching. The following list illustrates the great variety of types of programs worldwide for primary school teacher preparation. (*Note*: Sources for this information are dated and programs may have changed):

- *Bangladesh*: Eight-month course at a Primary Training Institute leads to a certificate.
- *Burma*: After completion of middle school, a one-year training program at a teacher-training institute or college leads to certification as a Primary Assistant Teacher.
- *Burundi*: Teachers are trained through a seven-year series of secondary-level courses. Completion of full course leads to secondary school certificate and the Ordinary Teachers Diploma.
- *India*: Teacher Training Certificate awarded after completion of a one- to two-year course at a Teacher Training Institute.
- *Ivory Coast*: Training is at upper secondary level and leads to the qualification of *Instituteur*.
- *Panama*: The *Certificado de Maestro Normal* is awarded at the end of the last three-year cycle of secondary education in a teacher institution.
- *Peru*: A three-year upper secondary course leads to the title of Maestro Normal (British Council 1987; Postelthwaite 1988, cited in McGinn, & Borden 1995).

These variations notwithstanding, there is currently a worldwide trend in pre-service teacher training toward imposing the same level of preparation on all teachers – i.e., a bachelor's degree – regardless of the level they will teach (Cobb 1999).

Content

In most countries, the curriculum for pre-service teacher training programs consists of three parts:

- *Academic studies/ subject matter*, which can result in a degree or diploma of specialization in at least two school related subjects
- *Professional preparation*, usually comprised by the study of educational theory, foundation of education courses, professional studies such as pedagogy and methods courses, child development, and training linked with teaching skills necessary to be efficient and effective as a teacher in school, and
- *School practice/practicum*: this may vary from short practical periods in school to larger periods of internship. These periods may be supervised and reflected upon by training lecturers or the school personnel (Kachelhoffer 1995, Ben-Peretz 1996, Cobb 1999).

These three components represent typical content; however, as with the structures described in the previous section, there is much variation over the degree to which each element appears in a pre-service program. In some cases, programs emphasized the teaching of subject matter in the initial preparation and pedagogy in the practicum and induction program (i.e., the first year in the classroom) for new teachers (Villegas-Reimers 2003). In cases where student teachers enter training with limited academic backgrounds, pre-service training tends to concentrate more on academic subject training to compensate for schooling that the student teacher has not had or completed. And the practice

component might not be included at all. The following table illustrates these kinds of variations in Haiti, Yemen and Nepal:

Table 1: Proportion of different types of training in Haiti, Yemen & Nepal

	<i>Haiti (average hours/week three-year course)</i>	<i>Yemen (average hours/week, five-year course)</i>	<i>Nepal (total credit hours, two-year course)</i>
Academic training	53 %	70 %	86 %
Pedagogical training	23 %	15 %	8 %
Student teaching	0	5 %	6 %
Social education	10 %	0	0
Practical training	14%	10%	0
Total	100%	100%	100%

Source: Lockheed and Verspoor 1991: 99, extracted from table in McGinn & Borden 1995: 86.

The table above illustrates one of the key issues concerning the content of teacher training around the world: the balance between academic and pedagogical training. There is much debate about how much of each element should be included in training programs; unfortunately, there is virtually no research on this question (McGinn & Borden 1995). The table above also illustrates the very small percentage of time devoted to student teaching in Haiti, Yemen and Nepal. In fact, many teacher-preparation institutions in African and Latin American countries offer *no* opportunity for classroom teaching under supervision (Villegas-Reimers 2003, Bekalo and Welford 1999). The consequences are significant, for in such cases, there is no opportunity for student teachers to practice what they have learned in training, and no opportunity for trainers to assess student application of concepts. Bekalo and Welford (Ibid.) note one result of this omission: newly trained teachers teach subjects such as science in a lecture format with little, if any, emphasis on the practical applications of such knowledge.

In-service training

Greenland (1983) has described in-service teacher training as training that is designed to:

- provide certification for unqualified teachers
- upgrade teachers' knowledge or skills
- prepare teachers for new roles such as teacher educators or principals
- introduce new curricula or provide teachers with refresher courses (in Villegas-Reimers 2003: 56).

As with pre-service models, the structure of in-service training can vary dramatically. Formats include:

- school-based workshops, teacher observation & feedback and mentoring
- cluster-based workshops and meetings
- modularized instruction through which teachers study individually or in groups, sometimes with support at a central location (school, training center) from a more experienced teacher or tutor
- the use of structured instructional materials in teaching, supported by periodic visits, observations, meetings and workshops
- media-based training: Interactive Radio Instruction (IRI), radio-based training via drama- or lecture-based formats, two-way radio support, DVD- or video-supported

- training, televised model lessons or lectures, Computer Assisted Instruction and internet-based learning and support, and
- institutional course formats, usually used for upgrading of teacher qualifications during school holidays.

As with pre-service models, these different in-service formats can provide many types of content, from academic training in specific subjects such as math and language to pedagogical methods such as group work and classroom management to professional development topics such as action research and reflective practice.

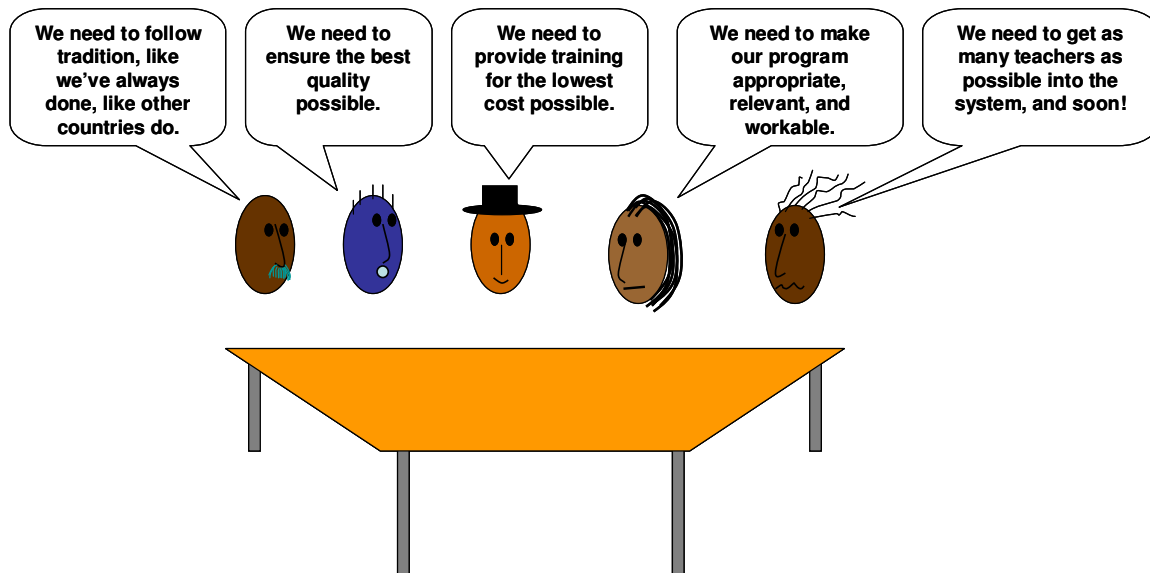
As we shall see in the following sections, in-service models vary tremendously around the world. In some places, it is mainly used to orientation to a new curriculum, in others, to improve teachers' knowledge and instructional skills. In some countries like Nigeria, in-service is understood principally as a formal mechanism for upgrading one's professional qualifications in order to merit higher status and salaries; skills upgrading is called "refresher courses."

Trends in pre-service and in-service teacher training

An important trend in teacher training is the increasing use of in-service for the delivery of initial training. Whereas pre-service training is by definition initial training (because it occurs before a teacher begins teaching), initial training can also occur *after* a teacher begins teaching – what Perraton (2000) calls "initial training delivered as in-service." This type of training is increasingly provided for teachers who have been recruited to meet the expanding demand created by Education For All, but who have not yet been trained, much less certified. Many of these teachers have been recruited by the community, hired temporarily by the state, supported by NGOs or hired to teach in private schools before being trained or becoming fully qualified. Thus, the training they receive is in fact initial training, though it is delivered in an in-service format.

Another prominent trend in the world of teacher training is the convergence of pre-service and in-service training programs. Perraton (2000: 59) notes the example of Ghana where the MoE was planning a new structure for teacher education in which materials used by student teachers in pre-service programs would also be used by teachers in in-service programs who were also receiving training to become qualified. This shared use of materials is one of many ways in which the distinction between the content of pre-service and in-service programs is becoming blurred. And as we shall see in the TDMS example from Uganda, the dual use of TTIs and their staff for pre-service and in-service delivery illustrates how the structure of these two modes is also becoming blurred.

Finally, while some educators believe that pre-service training is sufficient for a life of teaching – what Perraton (2000) calls "the once-and-for-all" notion of training – the dominant trend is a view of teacher preparation and professional development that begins with pre-service and continues as a process of ongoing, lifelong learning throughout a teacher's career (Villegas-Reimers 2003: 44, Husen & Postlethwaite 1994: 6037, World Bank 2001).



Analyzing teacher training programs

As the illustration above depicts, decision makers tend to view the question of teacher training from one of five different perspectives. The first might be called the traditionalist perspective. The following story provides an example.

Like many African countries, Nigeria has an urgent need to provide a significant number of qualified teachers to staff its primary schools, especially the remote rural areas in the northern states where the supply of qualified teachers is on average lower than the rest of the country. Yet in spite of these needs, a prominent education official there once told this author, “The Nigeria Certificate of Education (NCE) is the minimum requirement for qualification of all teachers in Nigeria.” Unfortunately, the NCE can only be earned after 3 years of full time institutional training, or 4 years of part time institutional courses taught over the long vacation. “Why not include other forms of qualification in order to get more teachers into the system sooner?” I asked. The response: “All of the Commonwealth countries have this as a minimum for qualified teachers, so why shouldn’t Nigeria?”

This position reflects a common and resilient belief that institutional, pre-service training is the best possible way to train all teachers – what Evans calls “the edifice complex.”⁴ Yet as Craig et al note,

(T)here are a variety of ways to prepare and support teachers in a variety of environments. Just as there is no single type of effective teacher, but there are common elements associated with successful teachers, there is no single type of effective initial preparation course, but there are common elements that should be discussed and incorporated where appropriate in design and implementation (Craig, Kraft & Du Plessis 1998).

Which model of teacher training is best? This question is too broad to have one single answer. Contexts vary dramatically from industrialized to developing countries and from emergency to reform contexts. And as our decision makers sitting at the table attest,

⁴ Personal correspondence with the author.

these different conditions give rise to different perspectives, including considerations of quality, cost, relevance and pace. But at a minimum, most people would agree that any discussion of the quality of a teacher training program must take into consideration two important elements: cost and effectiveness.

Cost

Pre-service training programs are expensive. In fact, they can be surprisingly expensive, sometimes incurring costs per student averaging several times the costs of conventional higher education. According to Lewin & Stuart (2002), this is because they are heavily 'front-loaded' with most investment at the beginning of a teaching career, and their unit costs can exceed those of university education and may be 50 or more times the annual cost of a primary school place (p. ix). More importantly for our discussion here, the cost of pre-service can be two to three times higher or more than in-service programs, as we shall see in more detail below. Reasons for these costs can vary, from the length of training to the small size of training institutions, low student teacher ratios, inefficient working practices, historic budgeting largely unrelated to enrolments, and student scholarships and allowances (Lewin 2002, McGinn & Borden 1995).

Effectiveness

How do we know if a teacher training program is effective? A number of indicators are used in the research, including:

- Enrollment rates in teacher training programs
- Completion or pass rates of student teachers
- Exam scores when leaving the program
- Distinctive mentions earned in the training program
- Rates of teacher placement in teaching positions after training
- Teacher knowledge, usually determined by academic tests
- Teachers' self-confidence
- Teachers' attitudes about teaching
- Teacher retention (persistence in the profession), often measured at the 1- and 5 year points
- Teacher performance as measured by observed teaching ability
- Pupils' test scores.

In addition to this list of indicators, a country might have goals and objectives particular to its needs and circumstances which suggest additional indicators of effectiveness. For example, if training a large number of teachers in a short amount of time is a goal, then the number of teachers trained, or output, is an indicator effectiveness. If increasing the number of female teachers is a goal, then the number of female teachers recruited, trained and placed is an indicator of effectiveness.

In terms of output, the numbers lead to an indisputable conclusion: in-service programs can produce more teachers – in some cases, many more teachers – than traditional pre-service models within a given time frame. In the case of crash programs, they can produce 50 times as many, or more. For example, as we shall see in the next section, Angola's Teacher Education Program recently trained 20,000 teachers over a 3-month period.

There are several reasons why pre-service institutions cannot compete with in-service models in terms of output. One is their structure: being institutionally based, they are

simply not equipped to handle more than several dozen or several hundred student teachers at any given time. Another reason is their recruitment requirements: in most countries, secondary school qualifications (either lower or upper secondary) remain the minimum academic requirement for students wishing to enroll in teacher training programs. Such requirements put a cap on the number of potential recruits to the teaching profession. A third reason for the low output of pre-service programs is the requirement that students reside at or near institutions for long periods of time – a condition that limits the participation of rural people and women (see *The problem of recruitment* below).

In terms of teacher retention rates, several distance education programs have reported considerable success over the years. With the Zimbabwe Integrated Teacher Education Course (ZINTEC) program, 5 to 10 years after being trained 5,401 of 5,887 teachers trained were still working in primary schools and 270 in secondary schools in 1985 (Zimbabwe Secretary for Education 1996). Retention rates of those trained in alternative (non-institutional) programs in the US are also comparable to or better than those for traditionally trained teachers (Klagholz 2000; Feistritz 2002; Education Commission of the States 2003).⁵

In terms of teacher performance in the classroom, teachers in numerous countries have been observed. For example, in Guinea, a study in which teachers were observed in the classroom found that teachers trained in an 18-month alternative program performed as well or better than those trained in the traditional 3-year pre-service program (Allard 2002). Results of observations of teachers in Tanzania, Sri Lanka and Indonesia who had been trained in distance education programs were more mixed (see *Distance Education* below).

In terms of student achievement, Perraton (2002) notes that there is little evidence that pre-service teacher education provides skills and develops attitudes that carry through into a better education for pupils in school: despite the scale of teacher education, we are not sure that it works. Three overviews of the research data (Husen, Saha and Noonan 1978; Avalos and Haddad 1978; Schiefelbein and Simmons 1981) found only modest evidence of the effectiveness of pre-service training as measured by student achievement scores. Research analyzed by Fuller (1987) suggests that graduates of teacher training institutions often do no better than secondary school graduates, in terms of student achievement. Similarly, UNICEF found that “in different parts of the world, primary education programs that operate with underqualified and para-professional staff are often showing equal or even better student results than those operating with professional, certified teachers” (Torres 1996: 449).⁶

⁵ It is important to note that teacher placement and retention is an issue in all countries. In the US, 30 percent of new teachers leave the profession within five years and 40 percent of newly qualified teachers aren't employed in the profession a year after they graduate (Hardy 1998, Darling-Hammond 2001). However, such comparisons are only partially fair, given the different employment conditions in industrialized and developing countries. Teachers leaving the profession in the US know that other employment opportunities exist, whereas teachers in developing countries do not have such alternatives, illustrating how difficult teaching conditions must be if teachers are willing to leave the profession in developing countries.

⁶ Curiously, Chapman and Snyder found the opposite phenomenon when it comes to teacher performance in the classroom. Their research in Botswana revealed that teachers with post-graduate training presented content more logically and made better use of teaching aids than did uncertified teachers. Untrained teachers, however, gave more attention to their lesson preparation and exhibited more of a student-development orientation in their use of discipline in the classroom (Chapman et al 2000).

Various studies have examined the relationship between the type of training received, student achievement and teacher performance. The PASEC study (see box right) examined the relationship between type of teacher training and student achievement at grade 2 and 5 levels in 9 countries in Francophone Africa. That study found that in Togo, teachers trained in an alternative 3 month in-service program (called “recyclage”) performed approximately the same as ones who were trained through pre-service programs, when performance is measured on the basis of student achievement (Bernard et al 2004). PASEC researchers found similar results in Guinea, where teachers trained in 18-month course performed as well or better than the conventionally trained teachers, when effectiveness was measured by student achievement (see the fuller description of the FIMG program in our discussion of Guinea later in this paper).

We will discuss the relationship between teacher training and performance in greater detail in *Teacher performance and characteristics* below. Our concern here, however, is the question of why the record on pre-service programs is so mixed. There seem to be a variety of reasons. In a review of the literature, Villegas-Reimers (1998, 2003: 52) presents a list of problems that exist in teacher preparation in Latin America, which are equally relevant in Africa and elsewhere.⁷ They include the less-than-ideal characteristics of most candidates who enter the profession, curricula of poor quality, too much emphasis on theory and little or none on practice, programs that are too short, a weak relationship between programs and school practices, the poor preparation of teacher educators, and lack of attractive characteristics of the teaching profession (such as low status and low salaries) which, in turn, affects who enters the profession, who stays and for how long.

ABOUT PASEC

PASEC is a research program of the Conference of Education Ministries of Francophone Africa, or CONFEMEN (Conférence des ministres de l'éducation des pays ayant le français en partage).^{*} PASEC was launched in response to reports presented at the Education for All conference held in Jomtien in 1990 where the need for comparative data on the quality of education systems became apparent. PASEC specializes in conducting qualitative research and standardized student achievement testing in Grades 2 and 5 in order to examine the relationships between student achievement and factors such as teacher education, repetition policies and the existence of textbooks in instruction. To date, PASEC has conducted research in 9 Francophone African countries: Burkina Faso, Cameroon, Cote d'Ivoire, Guinea, Madagascar, Mali, Niger, Senegal and Togo. For more information, see <http://www.confemen.org>.

^{*} PASEC means *Programme d'analyse des systèmes éducatifs de la CONFEMEN*.

⁷ Indeed, there is a substantial literature on whether *any* teacher training makes a difference. Bruce Fuller (1987), reviewing 60 multivariate studies of school factors related to student achievement in the developing world, found that pre-service training was positively related to student learning in only 12 of the 26 studies that included amount of teacher schooling as a variable. His findings suggest that relative to the magnitude of the investment, the payoff from pre-service training is often small. This concern is echoed and amplified in a major World Bank report in which Lockheed & Verspoor argue that pre-service teacher training has been largely ineffective in changing the quality of education (cited in Chapman & Carrier 1990: 302). Similarly, Husén reviewed 11 studies on teacher training and found six that showed a positive effect, three show no effect and two show a negative effect (cited in Dembele & Miaoro-II, 2003: 21). In the US, the Abell Foundation issued a report in 2001 claiming that there is "no credible research that supports the use of teacher certification as a regulatory barrier to teaching" and urged the discontinuation of certification in Maryland. Citing the Abell Foundation paper, the U.S. Secretary of Education subsequently recommending that requirements for education coursework be eliminated from certification standards altogether and that attendance at schools of education and student teaching be made optional (Darling-Hammond 2002). In response, Darling-Hammond published a paper citing methodological flaws in the Abell Foundation report. These studies nevertheless point to a worldwide “crisis of confidence” in the effectiveness of pre-service teacher training.

While pre-service programs can have some positive results in terms of the quality of teaching, the fact remains that most pre-service programs fail to achieve the desired quality or economies of scale necessary for most developing country contexts. Yet problems associated with pre-service models do not suggest that an initial period of teacher training should be abandoned altogether.

Rather, as Coombe (1999) notes in a survey of the literature, the most cost-effective strategy to improve the quality of education in the developing world seems to be the use of a relatively brief period of pre-service training followed by systematic provision of in-service, especially during the early years of teaching. The Association for the Development of Education in Africa (see box right) argues for a slightly longer initial training period of at least 6-months, followed by a professional development plan, follow-up supervision and a variety of pedagogical supports adapted to the conditions of the student teacher (ADEA 2004). But regardless of the exact formula, the majority of research points to shorter initial periods than the traditional pre-service model offers, and more intensive on-the-job training and support. As the researchers in the multi-country MUSTER study put it, “there is no necessity for core periods of training to be continuous or front-loaded in terms of costs or training inputs” (Lewin 2003 xxi-xxii). They recommend the use of “mixed-mode” methods which make use of a variety of delivery channels including distance education and on-the-job training, both for their pedagogical effectiveness and their potential cost advantages (we will discuss mixed-mode training later in this paper).

ABOUT ADEA

ADEA, the Association for the Development of Education in Africa, is a network of African ministries of education, development agencies, education specialists and researchers and NGOs active in education. ADEA was established at the initiative of the World Bank in 1988 to foster collaboration and coordination between development agencies in support of education in Africa. Led and coordinated by African stakeholders and funding agencies, ADEA has eleven working groups engaged in three types of activities: advocacy work, analytical work, and capacity-building. For more information, see the ADEA website at: <http://www.adeanet.org>.

Issues and trends

Duration of teacher training

As noted in the previous section, evidence from several studies shows alternative models can produce results that equal or surpass those of pre-service training programs. However, it is impossible to make blanket claims about the ideal duration of training. For one reason, an alternative program can take longer than a pre-service one – e.g., the 3-year in-service mode in Uganda’s TDMS program vs. its 2-year pre-service model (essentially the same design being developed in Southern Sudan except that in Southern Sudan, the in-service program is 4 years long whereas the pre-service program is of 3 years duration for primary 8 leavers, 2 years for secondary leavers). Another factor is the amount of training. In Botswana, Chapman and Snyder found that teachers that had received more training tended to use less teacher-centered practices than their less prepared colleagues. This effect was strongest at the primary level and disappeared by the junior secondary level. Specifically, students in the classes taught by teachers with more pre-service training spent less time listening to the teacher talk and reading, silently or aloud, and spent more time doing group work, practical activities, and conversing about topics indirectly related to the immediate lesson. These findings would suggest that the amount of pre-service training can have a positive effect on teaching performance (Chapman et al 2000).

Similarly, a study of teacher training effects in the People's Republic of China found that greater amounts of pre-service training were positively associated with teachers' use of instructional time, with differences also disappearing at the junior secondary level. However, the PRC study also found that more training was associated with less teaching. For example, at grades 5 and 6, teachers with only a junior secondary preparation taught 40 percent more than teachers who had completed college. This pattern was interpreted within the "work life complexity framework" – that is, teachers with more training had higher status, which they used to secure a lower workload. For example, at grades 5 and 6, teachers with only a junior secondary preparation taught 40 percent more than teachers who completed college. The study also found that the differences in teachers' professional behaviors were based more on differences in the overall amount of training rather than specific nature of the training – i.e., that duration of training was a better predictor of performance than whether teachers had a higher level teacher training or overall level of education (Chapman 2000).

The problem of using teacher training institutions as substitutes for secondary schools

Wils and O'Connor (2004) show how increasing enrollments in primary school is closely tied to the proportion of adults with secondary education needed to teach. Some countries like Guinea-Bissau, Mozambique, Rwanda and Mali, they argue, would need to have about a third of their adult population with secondary education in the teaching force if they expected to meet full primary enrolment by 2015 (in Duthilleul 2004). This observation highlights a basic principle of teacher education: **If you want to increase the number of teachers produced in the long term, you have to increase the number of secondary school graduates.**

Yet in order to meet this demand, many countries combine secondary education with their pre-service teacher training institutions in order to provide "catch-up" secondary education to student teachers who have not yet completed their secondary school education while at the same time providing training for a teaching certificate. As Evans (2004) notes, this is a trap:

Most pre-service training in low-resource contexts is remedial secondary education. The majority of the curriculum is re-teaching the subject content that students should have learned in secondary school. While this strategy works, it is expensive, time-consuming and ultimately a bad strategy. If the problem is mastering the subject matter content, then a more cost-effective strategy would be to build additional secondary schools (which are much cheaper than teacher training institutions) and then recruit successful graduates for some form of teacher training that focuses on pedagogy and methodology needed to effectively facilitate learning in the classroom (p. 2).

According to McGinn & Borden (1995), teacher training institutions are ill-equipped to provide secondary education because the professors often are less well qualified than professors in regular academic institutions. Moreover, it is more expensive not because of high quality professors, but because of subsidies to students in teacher training (p. 185). This is the reason why some policy advisers have suggested that a complete secondary education be required of candidates for primary-school teaching (Lockheed and Verspoor 1991). Of course countries in immediate need of large numbers of teachers will only be able to follow this recommendation in time; nevertheless, it highlights the importance of expanding secondary school provision even while recruiting teachers in the near term.

The problem of recruitment

Many countries continue to require secondary school qualifications (usually upper secondary) for enrollment into teacher training programs. Moreover, most pre-service institutions require students to live at or near institutions of study for long periods of time, usually 2-3 years (though Kenya recently announced plans to extend its pre-service teacher training program to 5 years). Such requirements preclude the participation of local community people, including women, who are less able to leave their jobs or families. Many simply lack the resources to do so: in Uganda's UPE in drive in 1997, nearly half of the teachers were untrained and most could not afford to attend a residential college (Wrightson 1997: 2-3). Without these recruits, two problems are created:

- *Staffing more rural, remote schools becomes more difficult.* Failing to recruit local people to work in their own communities is particularly wasteful because they are usually the most likely to accept the conditions of service in rural areas, including lower standards of pay and job security, and they are usually the most willing and able adapt to local conditions (e.g., speak local languages, follow agricultural schedules) since they live there in the first place. And they are the most likely to stay since most people do not want to leave their communities.
- *Important populations are excluded, including members of diverse ethnic groups and disadvantaged groups.* In particular, failing to recruit locally differentially disqualifies women since they typically have lower levels of schooling than men and are less able to leave family obligations to reside at an institution that is far from home for extended periods of time. Thus, these requirements limit the possibilities of meeting equity goals, including the recruitment of female teachers who can serve as role models for girls.

Teacher characteristics and performance

What mix of inputs will, in the end, yield the best teachers? This, in addition questions of effectiveness, cost and duration, is perhaps the most prevalent question in the literature. There are a number of contenders for the title of "most important input," including:

- Teacher's academic background: the highest level of schooling attained by the student teacher (also called Teacher Educational Attainment)
- Class size
- Teacher's experience
- Pupil: teacher ratio
- Teacher status: public service or contractual
- Teacher's expectations of students.

The research on the effect of teachers' academic backgrounds on teaching performance is quite mixed. According to McGinn & Borden (1995), research shows that a teacher's level of academic education is the best predictor of teacher effectiveness when effectiveness is measured as students' achievement (p. 68). As discussed above, research conducted by Snyder et al in Botswana corroborates this observation. They found that differences among teacher groups had more to do with the teachers' overall amount of prior education than whether or not they had specifically received pre-service training (Chapman et al 2000). In the PASEC studies, however, teachers' levels of schooling were found to have little or no effect on student achievement (Bernard et al 2004). Where moderate advantages were observed, they were associated with teachers holding a 10th grade leaving certificate (the BEPC), but a higher level of education had no apparent impact (CONFEMEN 2004).

The World Bank also notes that Teacher Educational Attainment produced mixed results in their analyses, but that teacher schooling did emerge as more important for primary and early secondary grades, and for those subject areas requiring special skills, such as science, mathematics and literature (cited in Samoff, J. et al 2001: 55).

In addition to teacher's academic background, other teacher characteristics have been examined for the role they play in teacher performance or student achievement. The effect of teacher experience, for example, appears to be mixed, in some cases having an impact on student performance in primary and early secondary grades, but less of an impact in the upper secondary grades (Samoff, J. et al 2001: 55-56). Teacher expectations of students have also been cited as among the most consistently important variables in the achievement literature: positive teacher expectations of students produce positive results (Samoff, J. et al 2001: 56).

The relationship of other factors with quality are less clear. For example, CONFEMEN (2004) found no significant relation between student achievement and teacher status – i.e., whether a teacher was a public service employee or a contractual worker. Similarly, class size and pupil teacher ratios have failed to consistently predict teacher performance or student achievement in the international research. As a result of this mix of findings, Husen & Postlethwaite (1994) conclude that since common surrogates for teacher and school quality – class size, teachers' education, and teachers' experience being among the most important – are not systematically related to performance, policies should not be dictated simply on the basis of such surrogates (p. 1761).

An important related topic is teacher effect – i.e., to what extent does the teacher have an impact on student achievement? This determination is made by eliminating the effects of all other variables (e.g., teacher characteristics, pupils' home environments, etc.) and retaining the effect of the teacher's presence in the school as the main variable associated with student achievement. In industrialized countries, the teacher effect has been estimated to be relatively low at 5-15 percent. In developing countries, the teacher effect is much higher: in the 9 countries included the PASEC study countries, the teacher effect was significant at 27 percent, whereas only 3 percent of results were found to be attributable to teacher characteristics (CONFEMEN, no date: 5). This means that teacher characteristics (training, academic attainment etc.) play a relatively insignificant role. What seems to make the biggest difference is school- and classroom-level factors – that is, things like methods and quality of instruction, availability of materials, organization of instructional time, etc. (Husen & Postlethwaite 1994, Bernard et al 2004).

The issue of teacher motivation

No discussion of models of teacher training would be complete without mentioning the issue of teacher motivation. In teacher training, as in the rest of life, “cheap can be more expensive” – that is, when we pay as little as possible, that which we buy often breaks or does not work properly, requiring us to replace it with something that costs more anyway. Similarly, when governments strive to contain costs by providing inadequate training, follow-up or conditions of service, much greater costs are often incurred by the education system and society as a whole since qualified teachers become impossible to recruit or retain, leading to spiraling class sizes, increasingly difficult teaching and learning conditions, and in the end, a substandard education system producing a poorly educated populace.

In response to these problems, the general recommendation made in the literature is to ensure the professional status of teaching by providing three things:

- *Competitive, regular salaries with benefits*: Ensure timely payment of teacher salaries with benefits commensurate to parallel professions in a given country (e.g., other functionary positions, nursing), including opportunities for long-term, secure employment
- *Satisfactory working conditions*: Create conditions of work that enable teachers to carry out their duties in a professional and dignified fashion.
- *Ongoing training*: Provide ongoing support, professional training opportunities, and opportunities to upgrade teachers' qualifications.

Competitive, regular salaries with benefits

One of the most difficult decisions to be made by a government, particularly one that is managing an education system under unusually harsh economic conditions, is the question as to whether teachers should be hired into the public service as permanent salaried employees or as short-term contractual teachers. The hiring of contractual teachers has perhaps been embraced most ambitiously in Francophone countries – e.g., Burkina Faso, Chad, Guinea, Cameroon, Mali, Niger, Senegal and Togo – resulting in teacher costs at about 50 percent that of civil service teachers. According to the World Bank, this has brought teacher costs, expressed in per capita terms, down to about the level of other low-income countries including Anglophone Sub-Saharan African countries (World Bank: Africa web page 2005). In some countries, contractual teachers now comprise more than half of the teaching force, and some countries like Burkina Faso and Guinea now hire contractual teachers exclusively, with no mechanism for automatic entry into the public service.

The hiring of contractual teachers is a particularly difficult issue because while it fails to meet the long-term needs of teachers or education systems, it does solve the short-term problem of supplying sufficient numbers of teachers to boost enrollments within limited budgets. According to CONFEMEN, the hiring of contractual teachers has enabled numerous countries to increase their enrollments dramatically: Cameroon by 37 percent, Mali by 38 percent and Niger by 50 percent (Bernard et al 2004). Yet once these teachers are in the system, another problem arises. Senegal provides a useful illustration where, since the mid-1990s, volunteer teachers have been used in response to a severe teacher shortage. Initially, there was no career plan for these teachers, many of whom had completed three or four years of higher education. But pressure from various stakeholders, including the volunteer teachers themselves, led to the establishment of a career ladder for them (Dembélé & Miaro-II 2003: 30). Such is perhaps not only an inevitable outcome, but a necessary one as well if a country wishes to develop a competent teacher workforce, for without provisions that provide job security and advancement opportunities, professionals will not stay motivated and, in time, will seek employment elsewhere. Recognizing this phenomenon, numerous researchers have called for the institution of systems that provide primary school teachers with, among other things, open contracts according to the terms of a career plan, avenues for promotion, benefits, and specification of teachers' rights and discipline procedures according to laws in effect in each country (Craig et al 1998, Lewin 2002, ADEA 2004).

Satisfactory working conditions

Despite the urgent call made at the Jomtien Education for All conference in 1990 to improve the conditions of service of teachers, their status and working conditions have

reached “an intolerable low point,” according to a survey released in 1996 by the International Labor Organization (UNESCO 1996: 6). Intolerable working conditions include overcrowded classrooms, lack of materials and dilapidated infrastructure. In many countries, teachers must work with no desk, no chair, no staff room or library, no toilet and no access to food or water while at school, never mind electricity! And decreases in real wages have driven many teachers to leave the profession: between 1985 and 1995, teachers’ purchasing power dropped by more than 30 percent in the Central African Republic, Kenya and Madagascar (UNESCO 1996: 6). The inevitable result is a demoralized and diminished teaching force. According to a report by Education International, “the vast majority of teachers believe that they do not receive the moral and material recognition appropriate to their level of qualifications and responsibilities” (cited in UNESCO 1996: 18-19). In the late 1990s in Nigeria, people reported that they did not want to become teachers because it would destroy their prospects for marriage – who would want their daughter to marry a teacher? In Lagos, a sign in an apartment window in the late 1990s reportedly read: “flat for rent, teachers need not apply” based on the common knowledge that teachers’ wages were too poor or irregular to be counted on to pay the rent. If teachers’ working conditions remain intolerable or wage levels remain unlivable, work becomes demeaning and talk of “professionalizing teaching” becomes a farce. Moreover, for most people, including teachers, the greatest motivation is success. If they can see positive results from their work – i.e., children are learning and happy – then it is a joy to come to work and to keep teaching year after year. If, however, conditions remain unbearable, which is too often the case in developing countries, most will leave the profession as soon as the opportunity presents itself.

Ongoing training and support

If we want schools to produce more powerful learning on the part of students, we have to offer more powerful learning opportunities to teachers.... Unless teachers have access to serious and sustained learning opportunities at every stage in their career, they are unlikely to teach in ways that meet demanding new standards for student learning or to participate in the solution of educational problems (Feiman-Nemser 2001: 1014, cited in Dembélé & Miaro-II 2003: 30).

Because most teachers wish to see their field as a profession, ongoing training should necessarily be a part of their lives. It is unthinkable that a doctor, dentist or even information technology specialist would receive initial training, then never again upgrade his/her knowledge or skills. Not only is ongoing training key to producing competent professionals, it is one of the cornerstones of motivation. If a professional such as a teacher has the opportunity to learn about new teaching methods, learning theories, and techniques for making work more efficient, effective and rewarding, he/she is not only becoming a more competent professional, but is also being motivated to continue to learn and grow and become more of what he/she set out to do when the decision to become a teacher was taken.

Of course, this is not true of all teachers – many choose teaching as a stepping stone to other jobs with higher status and rewards. Some choose teaching because of the schedule, others because nothing else is available. But for those who choose teaching because they love children, love learning, love teaching or love the subject(s) in which they specialize, professional opportunities are the basic diet that will enable them to grow and develop while reinforcing the respect they receive from their colleagues, as wells reinforcing their own self-esteem. And for teachers who require additional assistance, especially beginning teachers and ones serving in more rural areas or difficult contexts (e.g.,

overcrowded urban classrooms), the need for moral and social support constitutes not just a professional opportunity but a critical need (Lewin & Stuart 2003).

Whether it be training, working conditions or salaries, countries that fail to invest in education pay the price; countries that invest reap the benefits. The comparison between Zambia and South Korea is well-known. In the early 1960s, the per capita income of each country was approximately \$100 per year. By 2001, Zambia remained one of the world's poorest countries with a per capita income stagnating at about \$320 per year, while South Korea had become one of the "Asian Tigers" with a per capita income of \$9,400 (World Bank 2002). Though there are important cultural and historical differences between the two countries that cannot be dismissed, one undeniable difference is the extent to which South Korea invested in education during that period (McGaw 2001).

Shift toward ongoing professional development as lifelong learning

As noted in our discussion of trends in in-service education above, one of the most prominent themes to emerge in the teacher development literature is the importance of ongoing professional development. The once-and-for-all or "filling station" approach to teacher training is giving way to a conception of professional development as a process of "continual refueling," beginning with some form of initial training (pre-service or in-service), then continuing with practice interspersed with opportunities for continued study, renewal, reflection and growth:

(I)t is time to move away from the traditional idea that there is an initial compartment called "pre-service" training followed later by some other compartmental training programs that periodically occur called "in-service" training. Teacher development is a process, not an event... Several countries are exploring shorter pre-service training, longer classroom practice, and continuous in-service training, often through a network of decentralized resource centers complemented by school-based support from headmasters and inspectors or special resource providers. In all these models, teacher training becomes a model of lifelong learning (Craig et al 1998: 56).

The arrival of the concept of lifelong learning in the context of teacher training is relatively recent in developing countries, but represents a growing theme in the literature. Several authors have described important elements of lifelong learning. Two of the most prominent are effective learning and sustaining change. Summarizing the literature, Coombe (1999) cites the importance of linking training to contexts and tangible outcomes for effective learning by student teachers (p. 30). Another concern for lifelong learning is the capacity for training to sustain change in teachers. Baker and Smith (1999) identified the following characteristics of professional development in the literature as being the most effective in sustaining change in teachers:

- a heavy emphasis on providing concrete, realistic and challenging goals
- activities that include both technical and conceptual aspects of instruction
- support from colleagues
- frequent opportunities for teachers to witness the effects that their efforts have on students' learning (Villegas-Reimers 2003: 21).

Distance education

Finally, we will examine one of the most rapidly growing and promising modes of training teachers – that of teacher training at a distance. The concept is not a new one, though in

times of rapidly increasing enrollments, limited state budgets, the drive to recruit more women teachers, to provide teachers in remote, rural areas, and to provide opportunities for lifelong learning, distance education modes are gaining in prominence as a key element of many teacher training delivery systems.

History

For decades, learners around the world have benefited from a variety of types of distance education, from correspondence and radio for primary school pupils in the remotest areas of Australia to televised college courses for students in the United States and Britain. Perhaps the first organized distance teacher training effort was in the 1960s when UNESCO set up an institute of education to train Palestinian refugee teachers which saw a decline in the proportion of untrained teachers from 90 percent to 9 percent over a 5-year period (Young et al 1980: 29). According to Perraton (2000), this experience may have had a ripple effect after UNESCO analyzed and published the results of the scheme and staff members from the Palestinian institute moved to comparable projects in Africa. Throughout the 1960s, distance education was used to train teachers in Botswana, Kenya, Malawi, Swaziland and Uganda, most projects consisting of a combination of correspondence teaching, radio and some supervision of classroom practice. In addition to providing access to training for large numbers of prospective teachers, these programs experienced high pass rates – between 83 and 97 percent - attributable in part to the fact that teachers got a salary increase upon completion (Young et al 1980: 34, in Perraton 2000). Then in the 1970s, Africa experienced another wave of distance teacher training projects in Nigeria, Tanzania and Zimbabwe, when governments decided to rapidly expand their primary education enrollments. As of 1995, some 40 countries had used some form of distance education for teacher training – 18 in Africa, 11 in Latin America and 8 in Asia (McGinn & Borden 1995: 220).

Definition

Perraton defines distance education as “an educational process in which a significant proportion of the teaching is conducted by someone removed in space and/or time from the learner” (1995: 25). This definition reflects the earliest conception of distance education born out of programs where the teacher was hundreds or thousands of miles away from the learner who followed a primary, secondary, tertiary or professional development course principally through written assignments, correspondence and in time, telephone, radio or television support.

However, over the last several decades, the definition of distance education has been evolving to include a variety of teaching and learning strategies with one element in common: not distance from the teacher but distance from an institution. Like the traditional distance education approach, these formats can include correspondence, self-instructional modules, telephone, radio and television but can also include cluster- or zonal-based face-to-face training, tutorials, learner-to-learner interaction, library study, laboratory or practice sessions, audio and video recordings, and electronic communications, including internet- and web-based training (ADEA 2002).

Distance education, then, can take into account a variety of elements but nevertheless typically includes:

- Decentralized mechanisms for facilitating learning such as print, radio or face-to-face instruction and support

- Two-way communication between instructor or tutor and learner, including mechanisms for providing feedback to the learner
- Official recognition of learning through accreditation or certification by some institution or agency (ADEA 2002).

Why distance education?

Governments and ministries of education typically embrace distance teacher training for one or more of four reasons:

1. *To increase rate of production of teachers:* Many countries are faced with an immediate need to dramatically increase their teacher populations in order to meet EFA targets. This need, arising from rapidly increasing primary school enrollments, can arise from immediate needs created by the re-establishment of the educational system after periods of conflict or war (e.g., Angola, Afghanistan), the official establishment of free, universal primary education (e.g., Malawi, Uganda), or increased confidence in the public school system (e.g., Guinea). In such situations, distance education for teacher training has enabled countries such as Zimbabwe and Tanzania to increase the numbers of trained teachers in the classrooms to an extent that would have been impossible using conventional teacher training colleges (Jegade 2001). For example, the Tanzanian teaching force grew from 29,735 in 1975 to 81,153 in 1980. In Zimbabwe, through the ZINTEC and other programs, the teaching force grew from 21,202 in 1975 to 28,118 in 1980 and 56,067 in 1985 (Perraton 2000). And from 1984-92, Nigeria trained 300,000 teachers through its Nigeria Teaching Institute (NTI) program (Perraton 2000: 67-68)!
2. *To contain costs:* During periods of rapid expansion of the teacher force, many countries simply are unable to afford high per student training costs. In this kind of budget environment, the cost of distance teacher training can particularly attractive since such programs have been shown to operate on average between one-third to two-thirds the per-student cost of conventional programs (USAID 2004). An evaluation of programs in Sri Lanka and Indonesia reports even lower costs that at one-sixth to three-fifths those of campus-based programs (McGinn & Borden 1995: 220).
3. *To recruit and train local teachers:* In order to meet EFA goals, more and more schools are being built by governments and communities in rural areas. Yet staffing these schools is often problematic as teachers often prefer to teach in cities, and resist being relocated to areas far from their families, especially remote rural areas. Moreover, as noted in *The problem of recruitment* (above), many rural people and especially women are unable to leave family obligations to move to a regional center to receive traditional pre-service training. Thus, to staff these schools, local recruitment and training of teachers who will teach in their own communities is becoming increasingly important. Distance education provides this possibility by permitting students to stay in their schools and communities while following their course of study. At the same time, it increases retention since teachers being trained in this fashion can remain in rural areas, it improves the possibility of implementing mother tongue instruction policies since locally-recruited teachers naturally teach in the language of their communities, and it helps meet equity goals in the recruitment of women teachers as role models for girls in primary schools.
4. *To enhance conditions of learning in the primary school classroom:* In many countries, learners find themselves in overcrowded and ill-equipped schools with untrained or poorly trained teachers and an environment that is not conducive to

learning. As a result, a good proportion of these children will not complete their primary school education. Under these conditions, distance teacher training modes are increasingly being employed to train teachers so that children can learn better in the short term (ADEA 2002). In particular, distance methods that enable teachers to improve their teaching practice immediately, such as Interactive Radio Instruction, have resulted in immediate and significant learning gains that are difficult to achieve through other means in the near term (see *Interactive Distance Education: IRI* below).

In addition to the points described above, distance teacher training has several other advantages. One is that it can be stopped or altered once original goals have been met. McGinn & Borden (1995) cite the case of Tanzania in which after running for eight years, the government had met its targets, so the program was stopped. Another advantage is the fact that distance education delivers information more directly to teachers than cascade models of training, thereby provided a more “undiluted” version of curricula, methods and materials as they are intended to be used. And with distance methods, teachers can learn about new methods, then apply them sooner than they can with traditional training modes (Robinson 1997: 125).

Effectiveness

But what of the effectiveness of distance education teacher training programs? While evidence is mixed, on balance the record shows that teacher training can be an effective way of training teachers. In an evaluation of 14 distance education teacher training programs, Nielson (1991) cited 9 as effective, 4 as ambiguous and one as negative. Research from numerous countries bears this out: statistics from Kenya and Nigeria suggest that part-time students learning at a distance achieve similar results to part-time, on-campus students (ADEA 2002: 39). In Zimbabwe, studies of teachers’ classroom effectiveness showed positive results while the examination performance of pupils taught by ZINTEC teachers were in line with the national trend (Perraton 2000).

In Tanzania, two separate research inquiries found that students trained at a distance tended to perform better than those trained in traditional pre-service programs on a number of measures of classroom performance; however, their command of subject matter was poorer. In particular, students trained in traditional pre-service programs performed significantly better in science than those trained at a distance (Perraton 2000). The two studies also found that the distance training program had been less successful in reinforcing self-confidence among female teachers (Mahlck and Temu 1989: 125-6).

Similarly, in Sri Lanka and Indonesia, students studying in face-to-face modes had better results in mathematics than those working at a distance. Yet in Sri Lanka, distance teaching methods worked “reasonably well” for the study of mother tongue languages, and produced better results than traditional training methods in teaching language and in developing professional attitudes towards education. In Indonesia, neither distance nor conventional education were effective in changing trainee teachers’ attitudes (Perraton 2000).

Cost effectiveness

Ultimately, it is the cost-effectiveness of distance teacher education modes that will persuade most decision makers – i.e., can distance education models achieve the same or better levels of quality as other models at lower per student costs? Though the evidence is

mixed, it is mostly positive. In the 14 training programs cited by Nielson cited above, 11 were rated for cost-effectiveness. Seven were considered cost-effective compared to alternatives while two were considered not cost-effective. A study of teacher training in Sri Lanka compared the cost-effectiveness of training in colleges of education and in teachers' colleges as well as through distance education (Tatto et al 1991). Teacher performance and pupil achievement were used as measures of effectiveness. Teachers who had received distance education were almost as effective as those trained in colleges of education and teachers' college, but the costs of their training were a small fraction of the costs of institutional training. Lewin (1995) concludes that in a country that has a shortage of teachers, it appears that expansion of qualified teachers could be done more efficiently using distance education (p. 385).

OF course, more detailed information on the effectiveness side of the equation would make these arguments more compelling. Unfortunately, most cost literature contains little information pertaining to exit exam scores, success in teacher deployment (placement in a teaching post), retention (persistence in the post), or teacher performance, usually measured by observation of teaching or student achievement – the key indicators of success. Where information can be found, it usually concerns completion and pass rates.

In terms of completion of training programs, the record is mixed. According to USAID (2004), a number of studies show a relatively high number of dropouts in distance teacher education programs (USAID 2004: 1). However, Perraton (2000) reports that completion rates vary widely, from 43 percent at the National Teachers' Institute in Nigeria to 83 percent in a more recent program in Nepal. Overall, she says, most programs have had high completion and success rates, especially when completion is linked to employment.

As for pass rates, 83 percent passed the course in Tanzania in the 1970s and became qualified as teachers (Chale 1993). In Zimbabwe, 80 percent passed with no significant differences between their results and those of conventional colleges, either in terms of total pass rates or of the number of distinctions awarded (Chivore 1993: 53). In a review of 9 more recent cases, most were between 50 and 90 percent, leading Perraton to conclude that distance teaching methods are, in practice, capable of getting students through their examinations (2000: 78). Additional comparative information on distance education program costs and related findings on effectiveness can be found in Annex A.

Lessons learned from distance teacher training programs

In spite of all the advantages of distance teacher training, many governments in developing countries have been reluctant to embrace it. Why? There seem to be several reasons, including the perception that distance education is second best, the unwillingness of some governments to introduce new technologies into education and training systems, the lack of expertise to manage such processes, and insufficient analytical research to inform policy and institutional development (ADEA 2002). Perhaps an additional reason for the hesitation of some governments to embrace distance teacher training is simply because it is viewed as inappropriate in their particular circumstances. McGinn & Borden (1995) note that distance education methods seem to be most appropriate when one or more of the following conditions hold:

- there is an acute shortage of qualified teachers
- regions vary widely in the quality of teachers
- some groups – e.g., girls – lack access to schools because there are not enough female teachers
- the costs of conventional teacher training makes expansion unfeasible

- infrastructure for transportation and communication are in place (p. 220).

Once the decision has been taken to employ distance teacher training methods, governments and ministries of education are wise to heed the lessons of the last 40 years. Murphy et al list some of the major ones:

Learners need to receive adequate support, often through teachers or facilitators educated and supported specifically in the educational methodology being promoted and in the use of the distance media. The curriculum and materials must be high in quality and responsive to local educational needs and culture. Political commitment to the program must be solid, and demand must be kept in place by providing a quality product and demonstrating its effectiveness to learners, their families, and governments. Finally, the program must be well designed to provide for sustainability in at least three ways: through a focus not on providing hardware but on meeting learning goals and fitting to and enhancing the wider educational system; through building capacity within the host country; and through planning for the funding of low to moderate, but important, recurring program costs. Distance education programs taking these factors into account have lasted for decades, but continued study is needed, particularly on programs using newer technologies (Murphy et al 2004: 1-4).

FIVE MODELS OF FAST TRACK TEACHER TRAINING PROGRAMS

Our discussion of teacher training programs so far – pre-service, in-service and distance education – provides a useful backdrop for a consideration of different fast-track teacher training models because increasingly, teacher training programs are combining elements of these different delivery models into *alternative models* in order to reach greater numbers of teachers, as well as to recruit under difficult circumstances and deploy them in hard-to-reach areas, while staying within limited budgets. Each of these alternative models was created to respond to a specific demand under particular circumstances, whether it be the need to:

- restart an education system in a post-war context
- upgrade or qualify practicing teachers who have received little or no formal training
- reach great numbers of teachers in remote or distant places
- improve teacher recruitment and retention through by incorporating customs and culture into the design
- prepare teachers to teach in “one room schoolhouses” or in multi-grade classrooms
- ensure that children are learning when there are not enough teachers to staff a school, or
- provide instruction in the absence of teachers altogether.

Whatever the design, all these models share three characteristics: in contrast to traditional pre-service models, they are able to get teachers into the system more quickly, they tend to be more practical, and they cost less. These models are:

- crash training programs
- distance education models
- mixed mode models
- local recruitment models and

- structured materials models.⁸

Each model has features worthy of consideration for the development of a teacher training package for Southern Sudan, and will be discussed in this section in turn.

Crash training programs

Our first fast-track teacher training model is what is referred to in the literature as a “crash training program” – that is, one that is designed to train as many teachers in as short a time as possible. Crash training programs are designed to meet the needs of a countries faced with an immediate and urgent need for large numbers of teachers, however well qualified. In addition to the advantage of being able to provide large numbers of teachers in a short amount of time, crash training programs tend to be popular with the public, thereby providing governments with a means of shoring up support and credibility in times of transition or instability.

UNICEF teacher training programs in Angola, Sri Lanka & Afghanistan

In Angola, 29,000 teachers were hired recently by the Ministry of Education, 20,000 of whom had a sixth-grade education or less. In order to provide catch-up training for these teachers, the Ministry of Education and UNICEF launched the National Education Capacity Building Program "Back to School" Teacher Emergency Package program. Within a 3-month period, 20,000 teachers were trained in preparation for the start of the academic year in February 2004. Training was provided via 352 local training seminars implemented by the MoE with support from UNICEF and financing from Norwegian and Italian governments. Teachers received a “teacher training package” of materials to improve delivery in participatory education methodologies; Portuguese as second language, HIV/AIDS awareness and mine risk education were also included in the curriculum. A UNICEF spokesperson understood the gravity of the situation when he described UNICEF’s rationale for taking this approach. Because of the pertinence of his remarks to the situation in Southern Sudan as well, he is thus quoted in full here:

With almost two million children in schools, we were faced with the situation whether we should wait another five years for trained teachers to emerge from universities, or act now and provide training to the teachers we had and ensure the children get to school. This bold move could translate into some 1 million out-of-school children attending school, and significantly raise the primary school attendance rate in a country where almost one half of all children are not attending school. The expansion of learning opportunities is essential, especially in areas where populations have returned and resettled, and is vital in the country's transition towards longer-term recovery and development. Additional teaching capacity has translated into enrolment increases of some one million students this year, reaching between 2.3 to 2.7 million registered primary school children in 2004.

In another example of crash training programs, UNICEF collaborated in 2001 with the Ministry of Education in Sri Lanka and other counterparts in conflict zones to provide “catch-up education” to children, volunteer teacher training and training in multi-grade education. Catch-up education was provided to 5,000 children and more than 1,000 teachers were trained in education methodologies. An additional 1,000 preschool teachers

⁸ *Local recruitment models and structured materials models* are terms coined by the author for this paper.

were trained in early childhood development techniques. In that effort, UNICEF also provided teaching equipment and supplies, more than 50 temporary classrooms were renovated and new classrooms were constructed. UNICEF also advocated for the demilitarization of schools that had been occupied by the armed forces or other armed groups.

In a third example, massive teacher orientation was provided to prepare 50,000 newly identified teachers across Afghanistan for the opening day of school in March 2002, relying on a combination of workshops, print materials, lectures and demonstrations, as well as radio broadcasts to alert parents and community leaders. In-service teacher training was planned to continue throughout the school year, along with interim teacher recruitment and selection. School supplies and teaching materials were produced and delivered under extremely difficult conditions, within a shattered infrastructure, in some cases over terrain that was infested with landmines. Sources used in this desk study indicated that the provision of school kits, uniform materials, learning aids and training of volunteer teachers was effective in motivating displaced children to return to school: in one month alone, more than 18,000 blackboards and close to 8 million textbooks were distributed. The program provided catch-up education for nearly 10,000 children. The overwhelming success of the effort could be measured by the 1.5 million children attending class on 23 March 2002, the first day of the new school year – double the number of children enrolled in previous years.

Sources: UNICEF 2002: 52, <http://www.reliefweb.int/rw/RWB.NSF/db900SID/SKAR-647H2X>;
<http://www.db.idpproject.org/Sites/IdpProjectDb/idpSurvey.nsf/wViewCountries/4F79B84366925DC0C1256E550047B6C4>;
http://www.irinnews.org/report.asp?ReportID=43769&SelectRegion=Southern_Africa&SelectCountry=ANGOLA

Pivotal Teacher Training Program, Nigeria

This program was also designed to provide large numbers of new teachers in a short amount of time. Secondary school leavers and above were eligible to enroll. The 18-month course consisted of a period of study in students worked through assignments in self-instructional modules and met with peers and tutors on weekends and during holiday periods. Tutors were not expected to teach, but to assist students with their work in the modules, to mark assignments, to administer exams and to mentor them during the 3-month internship that completed the program. One official told this author that the internship was an innovation in Nigeria; other teacher training programs had not provided the same level of mentoring. Graduates earned a “TC Grade II,” a level below the Nigeria Certificate of Education (NCE), the minimum qualification required for teaching in primary and junior secondary in Nigeria. The PTTP curriculum was essentially the first year of the 3-year NCE curriculum. In 2001, the PTTP produced its first cohort of 12,955 teachers and by 2003 PTTP had reportedly produced 40,000 graduates within a 3-year period, though fewer than half were employed. The program received mixed reviews; in particular, teachers unions complained that preparing teachers at below NCE level was harmful to the profession. However, researchers found that in some instances, PTTP graduates taught as well or better than NCE holders. PTTP was recently suspended but there is some discussion of reviving it.

Sources: LT Associates (2003), interview with Dr. Abdurrahman Umar, Director, Academic Services, Nigeria Teachers' Institute; Mr. U. Y. Ismaila, Director, Academic Support Services, Nigeria Teachers' Institute (2003)

Distance education

Our second fast-track teacher training model for discussion is distance education – an approach in which “a significant proportion of the teaching is conducted by someone removed in space and/or time from the learner” or in which the learner is removed from an institution of learning such as a teacher training college (see discussion of distance education above). Distance education models offer significant advantages in coverage and cost, with the bonus of reaching students in their own communities, thereby solving the recruitment problems discussed above.

Distance teacher training using print materials in Sri Lanka

In a distance teacher training program in Sri Lanka, content was delivered through self-study printed materials. A tutor visited each teacher three times during the academic year, observed their teaching and provided feedback. Trainees also met in regional centers, in two 2-day sessions and one 5-day session to discuss experiences. Although residential training produced larger gains in student achievement, the cost per unit of student achievement for residential training was 4½ times that of student achievement for distance education training (\$1,401 per trainee as compared to \$251 for distance education). As a consequence, distance education was more cost-effective method of training.

Source: McGinn & Borden, 1995.

Interactive Radio Instruction: Many countries

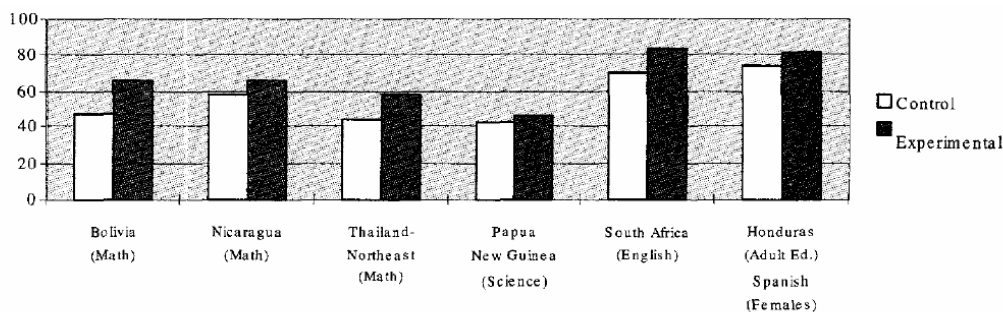
Interactive Radio Instruction (IRI) was born in 1974 when Stanford University developed Nicaragua mathematics program. Though objectives and formats vary, the most common form of IRI consists of radio programs broadcast directly into the primary school classroom during school hours, during which the classroom teacher conducts a lesson according to the instructions provided by a “radio teacher” and “radio students” in the program, with pauses for responses and action. IRI is an instructional tool because it ensures that key elements of the curriculum are covered and taught in an effective way, and it is a teacher training tool because it trains teachers in “real time,” walking them through a variety of teaching strategies that they can then use in other contexts. While IRI is principally an instructional tool, it has been used for teacher training in Guinea (FQEL project, 1998-present) and in Nepal, where teachers received certification after following the 10-month program (McGinn & Borden 187).

Three compelling arguments can be made for IRI: speed, effectiveness and cost. In terms of speed, the approach only requires one or two days of preparatory training that can be conducted on an in-service basis, with occasional support provided over time, especially in the initial stages to ensure proper use of radios, understanding of radio commands, etc.

In terms of effectiveness, numerous studies have been conducted from Bolivia to Honduras, from formal to nonformal educational contexts, experimental groups repeatedly perform better than controls. Moreover, studies have shown that IRI can lead to higher gains for girls (often due to lower pre-test scores) as well as closing urban/rural

performance gaps (Bosch 1997). Some researchers have found that when IRI is directed to schools with crowded classrooms and teachers with low levels of qualifications, it can be more effective than conventional instruction – i.e., students learn more in less time (Anzalone 1988, in McGinn & Borden 1995):

Figure 2: Comparison of mean post-test scores (percent correct)



Sources: Tilson, Jamison, Fryer, Edgerton, Godoy-Kain, Imhoof, Christensen and Roy 1991; Leigh 1995; Corrales 1995.

Source: Bosch, 1997.

In terms of cost, IRI is less expensive to develop than other mass media technologies such as television or DVDs: in the South African OLSET program developed in the 1980s, development and transmission costs of interactive radio provision were low: US \$1 per pupil per year and slightly more for teacher support (UNESCO 2001). Per student costs of IRI in Honduras in the 1990s were calculate at \$2.94 in the first year, including development costs with 200,000 pupils, but then fell to \$1.01 in recurrent costs for each year thereafter, and likely to fall even further as coverage expanded. A similar study in Bolivia found a cost per pupil in the first year at \$1.51 (including development costs), falling to \$.81 per pupil thereafter. Study authors noted that “when compared with the traditional mathematics classes, the cost-effectiveness ratio of IRI programs would be 64 percent from that point onward, assuming 200,000 students per year were reached” (Jamison 1990, Tilson, Jamison, Fryer, Godoy-Kain and Imhoof 1991, cited in Bosch 1997, UNESCO 2001).

Mixed-mode model

Our third fast-track model is the “mixed-mode” program, or one that combines college-based work with different types of distance learning (Lewin, 2003: xxix). Mixed-mode programs combine the advantages of pre-service and in-service by capitalizing on the resources available in an institutional setting (personnel, information resources, infrastructure) while realizing the advantages of in-service modes (reach, practical instruction and economies of scale). In the next section, we will discuss two mixed-mode models: Malawi’s MIITEP program and Guinea’s FIMG program. Here we will discuss another famous program from Zimbabwe.

The Zimbabwe Integrated Teacher Education Course

The experience of Zimbabwe during the 1980s provides an example of how to expand the number of teachers – from about 19,000 in 1980 to 54,000 in 1983 and 66,000 in 1990 –

while maintaining quality and containing costs. The supply of teachers was first increased along with the expansion in enrolment – from 800,000 in 1980 to more than 2 million in 1982 – by employing untrained teachers, especially at the primary level. Then the Zimbabwe Integrated Teacher Education (ZINTEC) was introduced, an accelerated four-year teacher-training program consisting of two terms in college, one at the beginning and the other at the end, and the rest of the time spent teaching in the schools accompanied by distance learning materials and face-to-face tutorial support. ZINTEC was considered successful in terms of both quality and cost-effectiveness – the cost of training a teacher under ZINTEC was less than half the cost of conventional training. ZINTEC also offers a good example of how head teachers, experienced teachers, district education officers, tutors and others can be effectively involved in school-based training.

Sources: Ncube, 1982; Chung, 1993; Schleicher, 2001.

Local recruitment model

Our fourth fast-track teacher training model is the local recruitment model in which teachers are recruited and trained locally to work in schools in their own communities. These models carry numerous advantages that address *The recruitment problem* discussed above, notably the issue of staffing rural schools, recruiting members of underrepresented groups and women into the teaching force, providing a flexible model of schooling for rural children (e.g., school calendars adapted to agricultural schedules), and providing teachers capable of teaching in the language of the environment. And like the other fast-track models, they are capable of getting greater numbers of teachers into schools more quickly than conventional programs while providing more practical (in this case, locally-relevant) training and at reduced costs.

Alternative schooling, India

Alternative schooling is a system started under the District Primary Education Program in Madhya Pradesh, India that provides primary education to children of primary school age. A village government body called the *panchayat* advertises teacher posts locally, then appoints two teachers to each school. Both must be local residents, and one must be a woman. Teachers must have completed secondary school; qualification requirements for women can be relaxed to 8th grade completion if necessary. Teachers undergo a 21-day induction training course, followed by a 12-day recurring training course. As of the year 2000, there were 5,384 such schools.

Source: Gottelmann-Duret, 2000.

BRAC, Bangladesh

Perhaps the best-known alternative teacher training model in the world, the Bangladesh Rural Advancement Committee (BRAC) began in the 1970s to provide a mechanism for microcredit and small income generation to the rural poor in Bangladesh. In 1985, BRAC expanded its program and began conducting primary school support activities with the aim of providing, in a three year period, basic literacy and numeracy to the poorest rural children (eight to ten year olds) who have never attended primary school, with a special emphasis on girls. The program was designed so that parents would incur practically no direct costs for sending their children to BRAC schools. Today, the model works as follows: books and supplies are provided free, uniforms are not required, school hours are varied to home and agricultural cycles needs, and schools are located in close proximity to

the student's homes. Teachers are usually married adults, 60-70 percent of whom are women, having completed nine or more years of education and living within easy walking distance from the school. These teachers are hired on a temporary, part-time basis and are paid modest wages. There is one teacher for each 30 students. Teacher training includes 15 days of initial training at a residential BRAC training center and one or two day refresher training sessions each month conducted by BRAC staff at a BRAC office near the teacher's school. Weekly visits from BRAC field workers provide regular feedback. The results are impressive: more than 90 percent of the children who start BRAC schools graduate, and a large proportion of the graduates are admitted into Class IV or higher of the Government school system. The annual costs per enrolled student in BRAC and the formal school system are approximately equal; nevertheless, the relatively higher attendance rates, lower repetition rates, higher Class III completion rates, and higher Class IV continuation rates for BRAC students mean that BRAC schools are substantially more cost efficient per graduate than the government's formal schools.

Sources: Ahmed et al, 1993; Sweetser, 1999.

Village Schools Model, Egypt

The Village Schools Model, supported by Egypt's Ministry of Education and UNICEF, is based on local selection of "facilitators" rather than "teachers" with a focus on co-facilitate of pupil learning. The project selects two women from the vicinity of the community school to serve as facilitators, usually secondary or technical school graduates, using a personality test in which a woman's aptitude for teaching is assessed based on her ability to work with children, her disposition toward teaching, and her acceptability and openness to the community.

Women receive twenty-five days of initial training over a three month period that is provided by staff of the faculties of education from the universities in Assuit and Qena, local NGO field workers and supervisors, and UNICEF technical assistants. Training includes an initial 8 to 10 days of team building and enhancing the women's confidence in oral communication as well as multi-grade teaching strategies and making of teaching resources, child-centered methods, and building self-confidence. Since two facilitators work together in the same classroom, the training also helps to establish a tradition of continually discussing issues, developing shared materials, and consulting each other on ideas to improve the children's learning. Towards the end of this initial training, participants spend two weeks to one month in structured classroom observation.

Once this initial training is completed, facilitators are supported through ongoing training at the local level for the rest of the year and into the summer months. This training is very structured, consisting of weekly staff meetings to share new instructional ideas, resources, and methods, and to discuss how to deal with problems that arise, particularly those in the classroom. Visits and internships in existing community schools, observations and interaction with children, and regular practice of effective teaching methods and feedback characterize the training. Practices for discussion are focused on child-centered, action-based activities, and the teacher as a learning facilitator. Self and peer evaluation of teaching are strongly encouraged. The facilitators are paid by the Ministry of Education for the nine months that schools are in session, and by local NGO contributions during the summer months. The local NGO also provides field workers and supervisors who supplement the work of the Ministry by visiting teachers to provide support and guidance and to deliver school supplies.

Source: Harwell, 1995 in Craig, Kraft et al, 1995.

Structured materials model

Our fifth and final fast-track teacher training model is the structured materials model. Similar to the local recruitment model, the structured materials model also usually targets undertrained teachers and hard-to-reach populations, though in this case through the use of highly-structured instructional materials. These models provide teachers with an alternative model of teaching while relieving the teacher burden at the school level, sometimes functioning with 1 or 2 teachers in a school. At the same time, structured materials programs can strengthen pupils' study, communication and critical thinking skills.

The Improved Efficiency of Learning Project, Liberia

The Improved Efficiency of Learning (IEL) project is based on a split model of programmed materials for lower grades and self-instructional materials for upper grades. Begun in Liberia in 1979, the IEL project was a response to two major problems: lack of instructional materials in classrooms, and shortage of trained and qualified teachers. The project used the following approaches:

- programmed teaching and learning
- self-instructional materials
- peer group learning and
- peer and cross-age tutoring.

All subjects in primary school were included. In the lower grades, use of programmed materials compensated for the lack of knowledge of undertrained teachers. In the upper grades, students used self-instructional materials. On average, IEL project students scored 17 percentile points higher on standard assessment instruments than did students taught traditionally. Enrollments in IEL schools were expanded 71 percent with no additional teachers. Class sizes in the lower grades were increased to 60 students per teacher; in the upper grades the ratio was 70 to 1. Student failure and dropout rates declined. The project was shown to be highly cost-effective compared to conventional methods, and was ultimately adopted for all primary schools.

Source: Cummings, 1986 in McGinn & Borden, 1995.

Escuela Nueva, Colombia and other countries

The Escuela Nueva or "New School" is based on pupil self-instruction and pupil governance of the school. The Escuela Nueva movement developed over a period of 15 years for Colombian basic schools in rural areas. Initially supported by UNESCO in the 1960s, the Escuela Nueva evolved as a method for multi-grade teaching. Now implemented in 20,000 rural primary schools in Colombia as well as Guatemala and other countries, the Escuela Nueva model seeks to increase time spent studying in and out of school, and to link the school more closely to the community.

The Escuela Nueva begins with practicing teachers and provides training in facilitating pupil use of the highly-structured materials. In contrast with the IRI, almost no direct instruction occurs in the Escuela Nueva. Pupils guide instruction and determine when to advance. All pupil work, especially after the first year, is programmed through modularized workbooks. Each lesson is divided into activities which pupils copy out of the

books, both the lesson content and their assignments. When a lesson has been completed the student moves on to the next lesson. Pupils choose which grade they wish by electing the number of activities they wish to complete. When the lessons for a given year have been completed the student can move to the next year's book.

No students fail grades, as grades no longer need to exist. Some students can and do finish the five-year program in less than five years, others take more than five years. Each unit requires students to pose questions based on the material they have read, and to then collect evidence to answer these questions. This work is done in small groups; students work around small movable tables (there are no desks). A classroom can have any number of "grades" within it, and one teacher works with students at several different levels. Many of the Escuela Nueva schools have two teachers for all five grades.

A key element in the program is the creation of a student government which makes students (under the authority of the teacher) responsible for all aspects of the functioning of the school. This includes discipline, maintenance of the school garden, sweeping and cleaning, organizing and maintenance of the library, organization of the sports program. A significant amount of time is spent on election of student officers and participation in committees for decision making about the school.

Students from the Escuela Nueva do better than students from conventional schools on standard achievement tests. Evidence that the program teaches children to think creatively and independently is suggested by their experiences in secondary school. Reports are that Escuela Nueva students find the conventional secondary program dull and slow; teachers complain that Escuela Nueva students ask too many questions, and want to work on their own. The Escuela Nueva program is slightly more expensive because of the cost of the instructional materials. Teachers are required to spend more time working in the Escuela Nueva, designing new materials and new activities for students. This has been accomplished in Colombia without salary increments, but with much higher levels of job satisfaction because teachers feel more like professionals.

Sources: Schiefelbein, 1991 in McGinn & Borden, 1995; Tatto, 1997 Ch. 12 in Cummings & McGinn, 1997.

The five fast-track models discussed in this section illustrate the range of teacher training models in use around the world over the last 40 years. Their success rates demonstrate that just as there is no single type of effective initial preparation course (Craig et al 1995), there is no single type of alternative or fast-track model either. As with initial training models, the success of fast-track models depends largely on the appropriateness of their design given program goals and local contexts.

The programs discussed above are also more "pure" examples of the models they were selected to illustrate. In practice, many programs are more hybrids of these models, drawing on particular elements in order to meet selected objectives. In the next section, we will discuss three of these programs: the MIITEP program in Malawi, the TDMS program in Uganda and the FIMG program in Guinea. Each of these programs fits our fast-track notion in that it gets teachers into the system sooner than conventional training models, it is more practical, and it costs less. But as we shall see, there are significant variations as well.

THREE FAST-TRACK TEACHER TRAINING PROGRAMS

The MIITEP program in Malawi

Background

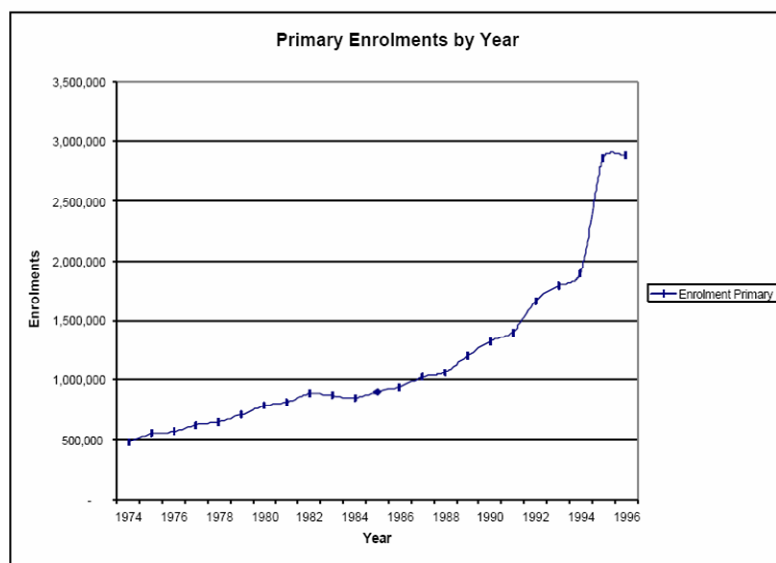
At Independence in 1964, Malawi was training its teachers through a 'normal' training program in which students took a two-year residential college course, after which Junior Certificate entrants qualified as T3 teachers and Malawi School Certificate of Education entrants qualified with T2 qualification. By the 1980s, this model no longer met the demands of the evolving education system in which greater and greater numbers of children were enrolling in primary school, and the growing numbers of teachers needed to educate them. So in 1989, the Malawi Special Distance Teacher Education Program (MASTEP) was established to train teachers on-the-job through a combination of short residential courses, local seminars, and distance learning methods. MASTEP was discontinued after 3 years, and replaced by a program of one year's field training followed by one year's residential course in a college (Hauya 1997, Kunje and Lewin 2000).

MALAWI AT A GLANCE

- ❖ **Population:** 10 million
- ❖ **Per capita income:** \$160
- ❖ **Literacy rate:** male: 76 percent, female 49 percent
- ❖ **Gross enrollment rate:** 135 percent total (142 percent male, 128 percent female)
- ❖ **Percentage of repeaters:** 18 (male: 17, female: 19)
- ❖ **Primary completion rate:** 71 percent total, 69 percent female

Sources: World Education Report: Teachers and teaching in a changing world (1998) New York: UNESCO; World Bank World Data (1994-1996)

Figure 3: Malawian enrollments, 1974-1996



Then, in 1994, Malawi announced Free Primary Education (FPE) for all – an initiative that resulted in nearly a 50 percent increase in primary school enrollment numbers, from about 1.9 million to 2.8 million, within a two-year period (see Figure 3). This change created an unprecedented demand for new teachers to which the government responded with an emergency training program. In all, approximately 20,000 teachers were recruited

and received a basic two-week teaching skills orientation, then were sent directly to schools to begin teaching. This massive recruitment of teachers succeeded in reducing the pupil/teacher ratio to 63:1; however, it did not solve the problem of ensuring that children were taught by competent and qualified teachers.

At the same time, a number of factors were converging, causing Malawi's Ministry of Education to rethink its methods of preparing and providing teachers. These factors included teacher migration to the increased number of public and private secondary schools, attrition due to HIV/AIDS, reduced dropout, expansion in the size of the school age cohort, and the requirements of Malawi's Policy and Investment Framework which specified, *inter alia*,

- A class size of 60 pupils per class
- A substantial increase in secondary school places to achieve a transition rate of 30 percent into Form 1 and a planned increase of 6,000 secondary teachers by 2005 working in an integrated secondary school system.
- Upgrading of Teacher Training College staff to degree level to improve the quality of learning and teaching in Colleges
- Decentralization of education delivery services including those related to in-service support of new teachers (Kunje et al 2002).

In addition to these pressures, the problems of Malawi's primary school system were well known. Internal efficiency was low: even now, it is estimated that one-third of all pupils drop out between grades 1 and 2, and that only one-fifth of children entering primary school will complete their schooling within the allotted time. Pupils from urban areas spend longer in school than those from rural areas. Repetition rates are as high as 25 percent, and less than 10 percent of pupils completing the primary cycle go on to secondary school (Kay 2000).

In light of these conditions, the MoE began to study ways of improving the quality of instruction in its primary schools. With funding from the World Bank and the German Gesellschaft für Technische Zusammenarbeit (GTZ), MoE personnel participated in study tours to other countries within the region (e.g. in Zambia and Zimbabwe) to learn how similar problems had been addressed elsewhere. In light of lessons learned, a program called the Malawi School Support Systems Program (MSSSP) was launched to strengthen teacher development systems in the primary sector, including support for Teacher Development Centers, institutional and system capacity to support teacher development, a national training program for senior school staff and primary education advisors, and monitoring, evaluation and management systems. Eventually, as a direct response to Malawi's Policy and Investment Framework and continuing enrollment pressures, the Malawi Integrated In-Service Teacher Education Program (MIITEP) was created in 1996,

ABOUT MUSTER

The Multi-Site Teacher Education Research Project (MUSTER) is a research project on teacher education conducted from 2000-2002 ??? in Ghana, Lesotho, Malawi, and Trinidad and Tobago by the Centre for International Education, Institute of Education at the University of Sussex, and partner institutions in each country:

- The Institute of Education, University of Cape Coast, Ghana
- The Institute of Education, The National University of Lesotho
- The Centre for Educational Research and Training, University of Malawi
- The Faculty of Education, University of Durban-Westville, South Africa
- The School of Education, The University of the West Indies, St. Augustine's Campus, Trinidad.

The aims of MUSTER were, *inter alia*, to enhance understanding of how new teachers acquire the knowledge, skills and attitudes; categorize different types of pre-service provision; identify patterns of overall costs; and consider implications for efficiency, effectiveness and the prospects of meeting demand in sustainable ways.

MUSTER was financed by DFID.

effectively replacing its pre-service teacher training system. MIITEP remains the sole model of training of primary school teachers in Malawi (Mazloun 1999; Kunje 2002).

Program purpose & strategy

In light of the conditions described above, MIITEP was designed with two aims in mind:

- to rapidly provide a large number of teachers in response to the dramatic increases in pupil enrollment ushered in by UPE, and
- to introduce more progressive, learner-centered and interactive teaching methods in both colleges and schools (Kunje 2002).

Entrance requirements

Candidates for the first MIITEP cohort were holders of the Malawi School Certificate of Education (MSCE) certificate (earned after completing secondary school) and a minimum of two years' teaching experience for males and one year for females. For the second and following cohorts, both the MSCE and JCE (Junior Certificate of Education – earned after 2 years of secondary school) were accepted, with priority given to those with the most teaching experience (Kunje 2002: 29).

Structure of the program

MIITEP is a “mixed-mode” program – i.e., as noted above, one that combines college-based work with different types of distance learning (Lewin 2003: xxix). Briefly, the MIITEP program structure might be called 3-20-1 in which students:

- attend a one-term residential course held in a pre-service teacher training college, secondary school or primary school. During this phase, students do their teaching practice in a demonstration school, are assessed by a tutor and take an exam (3 months), then they
- assume a teaching post for the first time, or return to their previous teaching post to teach, continue studying through distance modules, attend 12 zonal seminars which provide opportunities for students to share experiences. Students are expected to receive ongoing support, supervision and assessment from their head teacher, the Primary Education Advisors (PEAs) and college tutors (20 months). Finally, they
- complete their training in a 4-6 week residential “revision course,” after which they take their final exam and, upon passing, receive their MIITEP Certificate (Kunje & Chiremba 2000; Kunje 2002).

Six teacher-training colleges located throughout the country provide courses for the residential portions of the program, and provide ongoing support for the field portion in through the work of the PEAs and college tutors. PEAs are expected to supervise and assess each student at least twice a month. College tutors are also expected to supervise and assess school-based student teaching practice, making visits at least five times during the 20 months of school-based teaching practice. Students are also expected to be supervised by head teachers in the schools in which they are teaching at least two times a week and assessed 3 times per term. During the school-based teaching practice, students are also required to write 12 assignments and 4 projects and forward them to their colleges for assessment. The curriculum both in the colleges and during the school-based training is based on a set of Student Teacher Handbooks developed by MIITEP. These handbooks emphasize child-centered teaching and learning strategies in order to help

children develop higher cognitive levels as well as improving basic skills in literacy and numeracy.

The program is staffed and implemented by Malawians, with GTZ serving as the professional training partner for MIITEP with one or two German consultants. A Teacher Development Unit (TDU) oversees project implementation. Together with the Malawi Institute of Education, the Malawi National Examination Board and GTZ, the TDU ensures that all training, supervision and examinations are carried out.

Output

MIITEP began recruiting cohorts from those enrolled in the emergency training program in place between 1994-6. By 1997, six cohorts were selected, totaling about 15,000 trainees over a 4-year period, or **3,772** teachers on average per year over a 4-year period (see table below):

Table 2: Number of teachers enrolled in MIITEP training program, per cohort

	<u>Cohort</u>	<u>Total</u>
1994-1997	Cohort 1	2330
	Cohort 2	2636
	Cohort 3	2526
	Cohort 4	2491
	Cohort 5	2494
	Cohort 6	2611
	Total	15088

Source: Kunje & Chirembo, 2000.

In addition to teacher training, MIITEP has produced a number of pedagogical materials such as the Student Teacher Handbooks and numerous supervision and assessment forms for the different support personnel.

Cost

In the MUSTER analysis is calculated a unit cost of \$590 per two-year trained teacher, not including development costs, training of trainers, induction of heads and PEAs, and technical cooperation assistance, all of which are substantial. While \$590 is less than conventional college-based systems, Kunje (2002) notes that costs could be reduced even more if various cost savings were introduced within the current MIITEP structure. For example, if school-based supervision was mainly undertaken by PEAs and school staff (recognizing that college staff cannot make all the scheduled visits anyway), and a contribution to boarding costs were made by trainees, costs could fall to about \$370 at 1999 prices (p. 9).

Evaluation

For this paper, two impact studies were identified: the Malawian MoE impact evaluation conducted by the TDU in 1999 in which questionnaires from 178 students from Cohort 6 were returned and analyzed, and the MUSTER reports from 2000-2002. Additionally, the author was able to interview Joy Du Plessis who participated in an evaluation of the MIITEP program.

Positive results: On the positive side, the TDU report indicates that initial training left students feeling confident and prepared to assume or resume their duties as teachers. According to the report, the residential course best prepared them in the areas of classroom management skills, teaching methodology and handling disciplines cases. The TDU assessment also reported that qualified teachers and head teachers were usually ready to help student teachers (called “UTs” or untrained teachers in the study), though mentoring was irregular and unsystematic. Du Plessis added that the methods and materials produced by the MIITEP program were generally of high quality.

In spite of the impressive gains number of teachers trained at relatively low costs, several problems were identified:

Weak academic background of students: Though MIITEP students had high average ages for initial training and came from diverse socio-economic backgrounds, they often came with limited cultural capital, had low levels of educational achievement (in many cases no more than Junior Certificate), and were not conspicuously proficient in the medium of instruction. Yet almost all had substantial experience as untrained teachers.

Weak school support: Though the MIITEP design called for numerous school visits by support personnel, the TDU reports that only 18 (23 percent) of their sample had been visited by their Primary Education Advisors at least once a month, and 36 (46 percent) once per term, as opposed to twice per month as required. Similarly, in the MUSTER report, most students said they had only one or two visits while in school by the different support personnel. The report explains some of the reasons for these problems and difficulties experienced during supervision:

...(C)ollege tutors were supposed to visit trainees five times during the 20 months in school. The regime devised was impossible to execute. The first cohorts followed each other directly into college, no funds were available for travel or subsistence, and tutors were not released from teaching until the first cohorts had been many months in schools. A period of four weeks was available with a limited number of vehicles for transport. Tutors could only spend a brief time in each school, perhaps seeing only part of a lesson, and having little opportunity to give feedback. Yet a grade had to be given. Tutors were not always able to see their own students, and many were not visited. Under this system, assessment could hardly be more than a ritual. If no mark could be reported from the field, the mark given for the one lesson taught by each trainee in the demonstration school during the college period was used. Almost all trainees passed teaching practice with good grades (Kunje 2002: 5).

Du Plessis also noted difficulties with supervision: PEAs were often insufficiently trained, and while they had motorcycles, they often lacked fuel. As a result, PEAs and tutors were often demoralized because they were unable to fulfill their roles as support staff.

As for supervision by the head teacher, the TDU reported that 27 students (35 percent of their sample) said they had been supervised by their head teacher at least once per week, and 15 once per month, instead of the requisite twice per week. Yet in spite of the infrequency of visits, MIITEP trainees appeared to value the inputs and support they did receive. Based on these findings, the MUSTER researchers concluded that “the current system of field support is over ambitious and demonstrably ineffective” (Ibid, p. 12).

Administrative difficulties: The MUSTER report notes that the colleges kept no continuous records of student performance, zonal activities were constantly rescheduled on short notice or cancelled altogether, and learning materials were late in production and delivery. The curriculum in use in the colleges appeared to be inefficiently delivered. Observational studies indicated that teaching time was often shortened by class administration and poor time keeping. Class sizes were often exceeded 80 students as a result of doubling up groups – this despite relatively low student-staff ratios. Lecturers appeared to be overloaded with teaching loads of between 8 and 12 periods a week.

Limited application of learner-centered and adult education principles: Though one of the two principle aims of MIITEP is to promote learner-centered approaches to instruction, MUSTER researchers found that students in training were given few opportunities to gain a deeper understand of teaching/learning contexts, the role of the curriculum, or strategies for adapting it to their learners' needs and interests. Few examples were observed of training in learner-centered instructional principles or reflective practice, incorporation of new learning into trainees' experience of primary schooling, or their perspectives on effective teachers and the teaching profession. Much of the material in the handbooks, as well as the training by tutors, was approached as facts to be learned, and the assessment regime reinforced this recall-based orientation of the curriculum in practice. The MUSTER authors note that

Overall, a technical rather than a reflective view of training emerges, along the lines of: 'we tell the students what to do, we show them, let them practice, and then they will be able to do it.' There was no discussion of why something that worked well in one context might have to be adapted by the teacher in another. Participatory learning' usually meant that students would be given some activities to do or allowed to talk about some ideas; they were still, however, expected to arrive at the 'one right answer'. Tutors and students shared this view: one tutors aid: 'Students should teach the way I taught them', and several students commented to the effect that: 'At school we did it the wrong way; here we are being taught the right methods'. There was no talk of reflective practice, or of preparing the teachers for an extended professional role. They are simply expected to become more efficient deliverers of the curriculum. This is congruent with the authoritarian stance towards professional knowledge – both in the Handbooks and among the tutors – and a reluctance to listen to the students 'experiences (Stuart & Kunje 2000: 53-4).

Limited skill development: Given the previous observation, it should come as no surprise that data on student performance was disappointing: even after training in mathematics and English, student competencies remained low. Moreover, both the TDU and MUSTER studies found that while new students learned to cope, it was only at a basic level and that their teaching was not of a very high quality, reflecting a limited repertoire of methods – mostly direct instruction with some questioning, then pupil work in exercise books. Small group work was infrequent.

Dilapidated conditions in the colleges: The MUSTER report notes that the college system is in an advanced state of deterioration

with staff working under very difficult conditions and achieving what they can against multiple adversities. College infrastructure varies from barely adequate to totally unsatisfactory. A combination of policy neglect, lack of maintenance, erratic and minimal funding, unstable staffing, and indifferent leadership appear to have

resulted in impoverished institutions with low morale and poor quality learning environments (Kunje 2002: 8).

Discussion

Given the problems cited above, consideration has been given by the MoE to two alternative patterns of training, including a one year program of full-time residential training followed by one year of school-based study, and a two year program of full-time residential study, including 16 weeks of supported teaching practice. According to Kunje (2002), the options under consideration would cost a minimum of twice as much as MIITEP and as much as four and a half times what MIITEP costs, excluding the costs of transition and development which would be substantial (Kunje 2002: 9). Moreover, both options would delay the release of teachers into the system by one year and two years respectively.

Whatever the outcome of this decision, MUSTER authors make several observations:

First, a consensus is needed on the level of demand for primary teacher training – i.e., how many teachers must be produced, and how soon? This invites a choice between methods that can produce trained teachers in sufficient quantity to meet demand, and those which might improve quality but will dramatically reduce the number of pupils with access to teachers with any training at all. It is conceivable that a MIITEP initial qualification, followed several years later by an intensive professional development program for selected primary teachers, might be the most realistic strategy for improving teaching in primary schools while containing costs.

Second, in the view of MUSTER researchers, the current levels of demand for new teachers in Malawi can only be met by maintaining recruitment of JC holders. If and when the supply of MSCE students is adequate, then recruitment from JC could be phased out.

Third, the curriculum for JC holders should be differentiated from that for MSCE holders to recognize their weaker academic backgrounds, poorer study and communication skills, and language competency levels. Similarly, some consideration should be given to reducing the length of pre-training experience as untrained teachers. This may or may not be applied differently to JC and MSCE holders.

In spite of its problems, the MUSTER authors conclude that MIITEP, or structurally similar programs, are the only way of affording to meet demand in cases such as Malawi's.

MIITEP is a good example of a program that, in spite of its difficulties, has effectively responded to a problem – that of an acute teacher shortage in the midst of exploding primary school enrollment. The problems encountered by MIITEP are emblematic of problems experienced by teacher training programs worldwide, with lessons to teach us about:

- *The need for a phased approach to teacher training programs:* The “one size fits all” approach to training teachers fails to take into consideration the different conditions facing a country at various points in time – in particular, the tension on the one hand between rising pupil populations and the consequent needs to produce teachers quickly, and on the other hand, the relative dearth of qualified school-leavers upon which to draw to fill this teacher need. Short-, medium- and long-term plans, with their attendant quality vs. quantity tradeoffs, must be made

in order to respond appropriately and effectively to educational needs at each stage of a country's development.

- *The need to vary the training design to respond to different student teacher backgrounds:* Methods and materials of teacher training need to be adapted to students with varying academic backgrounds. For example, students with poorer academic backgrounds do not perform as well in longer initial training periods, suggesting that for these students, a shorter initial training period might be more appropriate. Similarly, students with poorer academic backgrounds might need reinforcement in language and study skills as well as academic knowledge before they are able to successfully complete courses of study, especially at a distance.
- *The need for adequate support:* The best-designed teacher training program is bound to fail if resources for support are not provided to ensure its success. A common theme amongst alternative teacher training programs is the difficulty of providing adequate support for school-based training, in particular transport and training for tutors, and sufficient time allocated to tutors so that they can reach student teachers according to their established programs. According to Perraton (2000), faulty logistics and the near-collapse of the system for students to be visited in schools were among the reasons for ending the ZINTEC project. Likewise, the author of this paper is currently conducting a study of teaching component of the FIMG program in Guinea where the same difficulties are being experienced: insufficient resources allocated for transport for tutors and unrealistic calendars of support.

The TDMS program in Uganda

Background

During the 1970s, Uganda suffered under the vagaries of Idi Amin's rule. The primary education system was not spared this turbulence: the teacher attrition rate soared, the number of untrained teachers in the system increased, those who persisted in the system were underpaid, and as a result of the declining status of teaching, the teacher training colleges attracted fewer and fewer students. By 1990, the primary education sector was decimated: the primary school gross enrolment rate had dropped to 69 percent, approximately 40 percent of the primary teachers were untrained, women teachers were grossly underrepresented in the teaching force, and cohort survival rates were very low, especially for girls and pupils from disadvantaged groups and areas. Certified teachers earned only \$8 per month, requiring them to resort to other income producing initiatives which led to early departures from schools and high absenteeism, schools lacked adequate instructional materials and facilities, and standards were no longer in place. Then, in 1997, the government declared free and Universal Primary Education (UPE). To an already overstretched system were added significant new influxes of pupils. The teacher-teacher ratio rose from 1:40 before UPE to 1:60 in 1999, while pupil-classroom ratios jumped from 85:1 to 145:1 in the same period (Göttelmann-Duret 1996; World Bank 2002; Eilor 2003).

UGANDA AT A GLANCE

Population: 22 million
Per capita income: \$320
Literacy rate, male: 77 percent
Literacy rate, female: 51 percent
Gross enrollment rate: 117 percent
(120.7 percent male, 113.1 percent female)
Primary completion rate total: 61 percent
Primary completion rate, male: 48 percent
Primary completion rate, female: 32 percent

Sources: World Education Report: *Teachers and teaching in a changing world* (1998) New York: UNESCO; World Bank World Data Index (WDI), 2002-2003 figures

Throughout this period, the Government of Uganda made a series of changes to the formal education system. In 1986, it appointed the Education Policy Review Commission (EPRC) in order to appraise socio-economic conditions in the education sector and to make recommendations for sector renewal. In 1989, the EPRC published a paper recognizing the inability of the current system to provide enough teachers to meet burgeoning population demands, as well as to provide an acceptable level of educational quality. The report made the following recommendations:

Opportunity should be provided for untrained teachers to receive on the job training A crash program should be organized to produce the large number of teachers needed to meet the target of UPE... Selected colleges and satellite schools should be used for training with the help of coordinators appointed from the teacher colleges... (Ugandan Ministry of Education and Sports 2003).

According to the Ugandan Ministry of Education and Sports (MES), this report became a rallying cry for the creation of the Primary Education Reform Program (PERP), launched in 1993 to improve the quality and equity of primary education. Its objectives included:

- Increasing access to quality learning opportunities.
- Improving school management and instructional quality.
- Strengthening planning management and implementation.

In order to “jump start” the PERP, the Primary Education and Teacher Development (PETDP) Project was created. One of the first activities implemented was a series of distance education initiatives. For example, in January 1992, Mubende and Kiboga districts launched the Mubende Integrated Teacher Education Project to train its untrained primary school teachers. The success of this project led to the launching of the Northern Integrated Teacher Education Project (NITEP) with the aim of training the untrained primary school teachers in the northern region of the country. Then in 1995, the Teacher Development and Management System (TDMS) was created as a program of PETDP to improve instruction and alleviate the teacher shortage. The previous NITEP project subsequently became a national program run by Kyambogo University under TDMS (Aguti 1996; John Bwano, personal interview, June 2005).

Program purpose & strategy

Until TDMS was established, the only mechanism for qualifying teachers was an institutional pre-service program in which students, drawn mainly from O'Level (12th grade completion) were enrolled in a Primary Teachers' College (PTC) to study for two years, after which they would receive a Grade III Certificate. The selection of students was carried out by the teaching service commission, and only those with four passes in relevant teaching subjects were eligible. Crucially, the system did not provide for in-service training and support. Moreover, most tutors were part-time and poorly trained and therefore unable to provide quality school supervision. And the PTCs, most of which had been created politically, became increasingly dilapidated and inefficient (MES 2003).

TDMS was designed in response to this situation. According to the MES, the overall objective of TDMS was to improve the quality and equity of primary education provision in Uganda. It had two specific objectives:

- Increase access to quality learning opportunities; and
- Improve school management and instructional quality.

To meet these objectives, the following activities were proposed:

- Management training for all levels of education managers in order to strengthen management capacity of educational institutions.
- Revision and improving of the primary teacher education diploma, teacher education syllabi, and production of related instructional modules to improve quality of teacher education.
- In service training for untrained and under-trained teachers to improve number and quality of trained teachers.
- Refresher courses for teachers to enable them handle the ever-changing curriculum and examination demands.
- Civil construction and equipping of PTCs and coordinating centers (CCs) and selected primary schools in order to strengthen the pedagogical aspects of primary education.
- Community mobilization to increase access to quality education.
- Outreach tutor training to equip the tutors with knowledge and skills to handle outreach functions (MES 2003).

Originally financed by the Ugandan government along with IDA, USAID, the Royal Netherlands Government, TDMS was initially conceived as a way of providing teachers with training and support, thereby increasing teacher motivation and decreasing attrition (Aguti 2002; Dembele & Miaro-II 2003). At the same time, TDMS was intended to drastically reorient the focus and functions of the PTCs by adding an outreach function for on-the-job teacher training while retaining the traditional pre-service teacher education function (Equip2 website). Since its inception, TDMS has evolved into an integrated program focusing on child learning needs, a conducive learning environment, training of teachers and head teachers, development of instructional materials, and support for effective school management and community participation.

Entrance requirements and certification

The residential two-year course for prospective teachers recruits at O'Level and above, and the 3-year on-the-job training course is designed to upgrade practicing untrained and undertrained teachers (Dembele & Miaro-II 2003). Completion of either program leads to the award of a PTE Grade III Certificate, a minimum requirement for teaching in primary schools in Uganda.

Structure of the program

TDMS consists of two components: the residential two-year program and the field-based three-year program. The TDMS structure revolves around a reformed Primary Teachers' Training College called a Core Primary Teachers' College, or Core-PTC. Each Core-PTC has two departments: the traditional pre-service department, which runs the Primary Teacher Education (PTE) two-year residential course, and the Outreach Department, which oversees the 3-year in-service training program. Two teacher-training approaches are carried out using a mix of distance education modules and short residential face-to-face workshops, usually during the holidays. Three kinds of programs are provided by the Outreach Department of the Core-PTC:

- In-service Primary Teacher Education (PTE) courses for untrained and undertrained teachers,

- Management training and community mobilization, and
- Refresher courses or Continuous Professional Development (CDP) courses for practicing teachers.

The Core-PTCs are linked to a network of Coordinating Centers (CCs), or schools that serve as focal points for training and support activities for school clusters. Each coordinating center serves a cluster of 22 “outreach schools” on average. In densely populated areas, this can lead to a ratio of one CC for 20 schools, but in more sparsely populated areas, this ratio can drop to 1 to 10 or lower. One school in each cluster is selected to serve as a coordinating center school. There are presently 23 core-PTCs linked to 539 CCs. These in turn are linked to all the 13,000 Government Aided primary schools throughout the country.

Coordinating Center Tutors (CCTs) provide training for untrained and undertrained teachers in these CCs to provide formal qualifications. Teachers are trained using a revised PTE course curriculum, delivered through a mix of distance education modules and short residential seminars, the latter usually being conducted at the Core-PTCs during holiday time. The CCTs are provided with motorcycles or bicycles to facilitate their mobility. Each CCT lives in the cluster he/she serves and has a small resource center and office from which he/she services the schools in that cluster. CCTs are expected to visit each outreach school for at least half a day each month.

In addition to training of untrained and undertrained teachers, TDMS provides in-service training for trained teachers, head teachers, outreach tutors, district inspectors, school management committees, PTAS and Volunteer Community Mobilizers. Head teachers undergo a special one-year certificate course in Basic Management skills while the tutors and other education administrators undergo refresher courses intended to inculcate professionalism, introduce new educational innovations, and provide opportunities for continuous professional development for teachers. Delivery approaches employ distance-learning techniques supported by self-study modules and interspersed with short face-to-face sessions and Peer Group Meetings (Eilor 2003).

It is important to note that TDMS is not only intended to be a new structure for providing teacher training and support, but it is also for managing basic education more generally. Since TDMS,

- per pupil spending has risen
- parent and community mobilization has increased
- community-based classroom construction has been supported

ORGANIZATION OF A PTC

Each Core-PTC is managed by a Principal who is assisted by two deputy principals in charge of the pre-service and outreach departments respectively. These departments are staffed by heads of programs to support Coordinating Center Tutors (CCTs) in their program areas through training and counseling, maintaining student records and monitoring the program activities, organizing residential courses and materials development, and liaising with the Ministry departments and other national bodies responsible for course development and assessment.

CCTs are staff of the core PTC in the region and are supervised and supported by their Deputy Principle and other senior staff at the Core-PTC. These outreach tutors are not junior staff that are sent to rural areas as their first assignment; they are supposed to hold the rank of principal tutor, which is the middle of a five-step promotion ladder for staff of the PTCs. CCTs receive substantial additional training prior to being posted to their clusters. They also receive additional allowances for travel and materials to support their work in the schools. Being part of the PTC keeps the tutors linked professionally to current activities in teacher education.

Sources: Eilor 2003, Evans 2004

- teacher salaries have increased from 11,000 Ugandan shillings in 1992/1993 FY to 105,000 in 2003, representing a ten-fold increase in nominal terms over a ten year period
- a framework for systematic staffing of primary schools and a “staff ceiling formula” has been instituted to determine the annual recurrent budget for the primary teachers wage bill and to detect “ghost teachers” (Aguti 2002; Dembele & Miaro-II 2003; Evans 2004).

Output

This consultant was unable to acquire consistent cost figures for this report. One measure is based on Makau’s (2001, cited in Aguti 2002) figures of 8,685 teachers trained in the TDMS system through 2001. Assuming a 5-year period beginning in 1997, the earliest that TDMS students could graduate since the program’s inception in 1995, until the year 2001, the average number of teachers trained per year would come to **1,737**.

A second measure is based on Aguti’s (2002) figures that between 1995 and 1999, approximately 7,800 in-service teachers had been trained or upgraded and 3,023 candidates in pre-service courses for teachers had completed their training. Based on these figures, the annual rate of teacher training output is approximately **2,165** teachers per year (10,823 teachers divided by 5 years). This assumes that all teachers identified in the in-service figure had completed their training.

In a measure that falls well outside these two, the MES provides figures concerning the number of trained and untrained teachers per year. This of course does not take into account (1) non-TDMS training programs in Uganda, (2) the inflow of trained teachers from outside of Uganda during those years or (3) the possible inclusion of private schools. Nevertheless, the number of additional trained teachers per year can be calculated by subtracting the number of trained teachers from the previous year, as follows:

Table 3: Number of teachers trained and untrained by year: 1993-2002

	1993	1995	1996	1997	1998	2000	2001	2002
Trained	47,316	53,518	59,747	62,574	80,953	86,238	97,722	107,009
Untrained	31,833	20,883	21,817	26,673	18,264	24,128	29,316	32,475
Total	79,149	74,401	81,564	89,247	99,237	110,366	127,038	139,484
Difference in number of trained teachers over the previous year		6,202	6,229	2,827	18,379	5,285	11,484	9,287

Source: MES Statistical abstracts

Note: Source does not indicate why the years 1995 and 1999 are omitted.

By averaging the number of additional teachers trained per year from 1997 (the first year TDMS could claim to have completed training teachers, being 2 years after its inception in 1995) to 2002, the average number of additional trained teachers per year is **9,452**.

The range of these estimates is too wide to be considered reliable; nevertheless a conservative guess would place the TDMS annual output **between 1,700 and 2,165**

teachers per year – an impressive number compared to more conventional teacher training models (pre-TDMS output numbers were not available at the time of this writing). Put otherwise, the proportion of trained teachers rose from 52 percent in 1989 to 83 percent in 2000 (Aguti 2002; World Bank 2002). Equally impressive is the number of other staff who have been trained:

Table 4: Number of personnel trained by TDMS, 1995-2001

Staff Category	Numbers Trained
Untrained Teachers Upgrading to Grade III	8,685
Headteachers	7,414
Principals of Core PTCs	18
Deputy Principals in Core PTCs	36
Heads of programmes based in Core PTCs	54
Coordination Centre Tutors	539
Volunteer Community Mobilisers	13,000

Source: Makau (April 2001) cited in Aguti (2002)

Another impressive output of the TDMS program is the set of study materials produced for each of the programs run under its structure. Both the distance education students and the internal students are using these materials. The following table presents the number of teacher's guides that have been provided since the inception of TDMS:

Table 5: Number of teacher's guides provided between 1996 and 2001

Subjects	1996	1997	1998	2000	2001	2002
English	69,243	138,232	158,738	176,026	185,218	174,317
Mathematics	65,473	127,370	146,055	168,974	176,656	183,336
Science	42,352	94,043	137,148	161,759	170,010	180,195
Social studies	59,748	125,550	107,209	131,052	141,649	148,449
Total	236,816	485,195	549,150	637,811	673,533	686,297

Source: MES Educational statistical abstracts: 1996,1997,1998,2000, 2001 and 2002

For a list of titles of TDMS modules, see Annex B.

Finally, TDMS has produced a number of new programs and structures. For example, training programs for head teachers training program, head teachers and Outreach Tutors did not exist before TDMS, nor did the system of clusters, tutor outreach and support, distance education via modularized instruction, or parent/community mobilization. Since the inception of TDMS, 45 of Uganda's 96 PTCs have been revitalized, 23 of which are now providing classroom outreach (Engels 2001).

Cost

The author was unable to identify documentation citing per student costs for the TDMS program. However, one source quoted the *Medium Term Financing and Cost Issues in the Teacher Education Sub-Sector* (Directorate of Teacher Education MES 1998) as estimating

the cost of the in-service training program at approximately 50 percent of the cost of the pre-service program.

Evaluation

TDMS has received substantial praise for a number of contributions it has made to the Ugandan teacher training system. According to various sources (World Bank 2002; Aguti 2002; ADEA 2003, Du Plessis 2005), it has:

- increased the output and supply of qualified teachers
- improved the curriculum by making it more relevant as well as modularizing it in the form of quality materials for both in-service and pre-service training programs
- restored the status and integrity of teachers by providing salary increases as well as greater access to qualification through in-service training, continuous professional support and targeted incentives
- increased teacher retention (see box: *Why in-service training increases teacher retention*)
- resulted in better management of the teacher payroll
- ensured a more equitable distribution of primary teachers across the country through implementation of school staff ceiling formula
- improved the human resource base of the Core-PTCs
- increased the rate of classroom construction over traditional centralized approaches through the use of community based construction methods
- improved completion rates from 35 percent before UPE to 55 percent in 2000
- reduced primary school repetition rates which appear to have declined significantly for boys and girls, from 7 percent before UPE to 9 percent in 2000
- reduced primary school dropout rates to levels similar to repetition rates for boys and girls through grade 4.

WHY IN-SERVICE TRAINING INCREASES TEACHER RETENTION

Uganda has had greater success retaining teachers qualified through the in-service training program run by the Coordinating Center Tutors than through the colleges' pre-service programs. One reason for this difference is that many teachers qualified through the in-service program were already teaching in their own communities and, once qualified, were eager to continue teaching because of their family and other connections with the school community. This helped reduce the poor retention that characterized the old system.

Source: Engels 2001: 21

Still, much work remains to be done: UPE requires large numbers of teachers, and TDMS does not yet have the capacity to produce teachers at the rates needed to achieve reasonable teacher-pupil ratios (TPRs) in Uganda. As Aguti notes, the TPR in 1996 was 1:37; by 1999, it has risen to 1:63. Moreover, though 83 percent of the teacher force is now trained (World Bank 2002), the number of untrained teachers is still significant.

In addition to rising TPRs and large numbers of untrained teachers, the World Bank cites problems with teaching methods and learning outcomes. While they acknowledge that evidence is scant, tests administered to national random samples of 3rd grade pupils showed that the number of pupils who achieved a satisfactory score had declined from 48 percent in 1996 to 31 percent in 1999 on the mathematics test, and from 92 percent to 56 percent on the English oral test (2002). This author does not know if regression analyses were run to determine which variables were most strongly associated with these declines.

Discussion

Three aspects of the TDMS system deserve particular attention for our discussion here. The first is the way in which it integrates in-service and pre-service modes. According to Mrs. Beatrice Byakutaga, Principal of Nakaseke Primary Teachers College, pre-service, in-service, and outreach tutors now coordinate and co-facilitate training, and pre-service tutors help supervise the outreach activities. All teacher trainers used to be based at the college, and all teachers or teacher students went to the colleges for their pre-service or in-service training. Now, says Mrs. Byakutaga, a TDMS program manager, “tutors regularly travel to the coordinating center schools to observe what is happening and give us reports. Not only do the colleges bring services to where they are needed – to each school cluster – but coordinating center tutors are also invited to the college to handle specialized areas of pre-service and in-service teacher training. The two programs work together; they’re not separate” (cited in Engels 2001: 8).

Echoing Mrs. Byakutaga’s comments, the MES claims that TDMS has “radically transformed” the function of the PTCs to include extension and support for teachers in the field, thus providing another example of the blurring distinction between pre-service and in-service training:

Experience has emphasized the need to see teacher education as a continuous process. The initial training of teachers must be followed by training on-the-job and training away from the job, so as to provide for teacher development and effectiveness in changing circumstances. “Pre-service” and “in-service” training are not alternative modes of delivery but parts of a single continuous process of teacher education (MES 2000).

An additional advantage to integration, Evans (2004) claims, is that it provides a mechanism for delivery of new ideas and programs. In the absence of such a system, each new program or effort has to create its own ad hoc delivery mechanism.

The second innovative aspect of TDMS that deserves our attention is that it increases the quality of support to students during their teaching practice without the cost of expanding institutional facilities. As Evans (2004) explains,

The outreach system...supports the pre-service component by making possible much more effective supervision and support of students during the practice teaching phase, thereby strengthening one of the weakest components of most teacher training programs. In fact with such a system in place, pre-service can become more of a sandwich course, providing lengthy periods of teaching in schools interspersed with residential periods at the (PTC). Such models can increase the capacity of the (PTC) to produce teachers without expanding the facilities (p. 4).

The final way in which TDMS deserves our attention is that it enables more citizens from rural areas to participate in teacher training, thereby increasing the qualifications of existing teachers while providing access to otherwise marginalized groups such as women and minorities. Again, according to the MES,

Before the introduction of TDMS, would-be teachers enrolled in the traditional PTC for a period of three years to attain a teacher Grade III certificate. This approach could take long to deliver teachers so few were willing to enroll. However, with the introduction of TDMS, distance education has been introduced and this has attracted teachers to join. The study is conducted using self-study modules during term time and short residential courses during the holidays. This approach has

created a lot of convenience on the side of learners (since they do not necessarily leave their homes or schools for long periods) and has been cost effective to government as well. TDMS has reformed the way of conducting in-service training. Before the introduction of TDMS in-service training was conducted conventionally in the PTCs. For upgrading, one had to enroll again in the college for a period of three years. This discouraged many to upgrade due to the length of the course and fear of losing their jobs. In-service is now conducted through long distance education using study modules, peer group meetings, study visits, short courses at the CC during the holidays. This has helped many teachers to upgrade (MES 2000).

For these and other reasons, TDMS has become the main conduit for the larger education reform initiatives in Uganda. Yet another sign of its success is the fact that the Government of Uganda plans to institutionalize its activities, testimony to the fact that, as the World Bank notes, “The big bang approach can be a very powerful policy instrument for getting all the children into school, and Uganda had managed to do this very well (2002).”

These successes provide a useful point of departure for comparing TDMS to the MIITEP program.

First, instead of eliminating the pre-service program as MIITEP had done, TDMS designers chose to retain the residential pre-service component, effectively creating a double delivery system. This author was unable to obtain any evaluation of the TDMS program that took into account the relative advantages of this decision. Perhaps in time, an assessment will be made concerning the advantages of retaining the residential pre-service component. In light of the disadvantages of pre-service programs cited earlier in this paper, decision makers would be wise to assess the advantages and disadvantages of such a design, understanding that pre-service programs are not necessarily preferable or even, in some cases, competitive. On the other hand, Du Plessis noted that from April to November, the Teacher Training Institutes in Malawi were sitting idle while training was occurring in the field. Such a design also suggests significant opportunity costs in terms of teachers trained and missed research and development opportunities.

Another contrast with MIITEP is the quality of school-based support. Whereas MIITEP seems to have suffered from insufficient investment in training, programming and resource allocation for field-based tutors and lecturers, TDMS seems to have succeeded in ensuring that tutors are sufficiently trained and resourced and that training and support schedules can be met. A more detailed examination of the two systems in terms of time allocated, workloads of tutors, and resource requirements would be informative for other countries interested in learning from these examples.

A final contrast is the difference in scope: whereas MIITEP aimed to increase the number of teachers trained while instilling a more child-centered approach to teaching, the TDMS goals were much broader, including training and support for head teachers, education administrators and community mobilizers. Interestingly, in this case, the more ambitious project seems to have realized greater success, even in a context of limited financial resources. And the more systemic approach of TDMS carries with it the possibility of instilling changes in behavior and attitudes necessary for reforms like the introduction of child-centered instruction that programs like MIITEP might miss because it failed to reach a broad enough audience. For without the support of head teachers, education

administrators, parents and community members, reforms such as child-centered instruction are not likely to succeed, however effective the teacher training program.

The FIMG program in Guinea

Background

In the 1960s and 1970s, the education system of Guinea suffered a serious decline. For a number of reasons, including the lack of adequate training of teachers and provision of instructional materials and general economic hardship, parents gradually lost faith in the public school system and, by the mid-1970s, the primary school Gross Enrollment Rate had reached an all-time low of 26 percent. Following the death of Sékou Touré in 1984, the new government dedicated itself to re-invigorating the education sector. From 1989-93, the government announced the *Educational Policy Declaration* which stressed the importance of improving both access to and the quality of basic education, especially in rural areas. Implementation of the policy was aided by significant financing from the World Bank, resulting in the Educational Sector Adjustment Program (Programme d'Ajustement Sectoriel d'Education), or PASE I (1990-95) with a focus on increasing access or enrollments, and PASE II (1995-2000) with a focus on increasing quality and equity. By 2001, 2,778 classrooms had been built, the GER had reached 61 percent, the pupil-to-book ratio, formerly 40:1 improved to 10:1 and gender equity indicators had improved dramatically (CONFEMEN 2003). Yet in order to reach universal enrollment by 2010, Guinea's MOE estimated that 2,000 teachers per year would need to be recruited. The MOE also estimated that Guinea's normal schools, which were producing on average about 300 teachers annually in the 3-year pre-service program, would not by themselves be able to meet this need. Thus in 1998, with significant support from the World Bank IDA program and technical assistance from the Université de Québec à Montréal, the MOE launched a new teacher training program called the "Guinean Initial Teacher Training" program (or FIMG in French: Formation Initiale des Maîtres en Guinée).

GUINEA AT A GLANCE

- ❖ **Population:** 8 million
- ❖ **Per capita income:** \$430
- ❖ **Literacy rate:** 35.9 percent (49.9 percent male, 21.9 percent female)
- ❖ **Gross enrollment rate:** 65 percent
- ❖ **Percentage of repeaters:** 22 percent (21 percent male, 24 percent female)
- ❖ **Primary completion rate:** 41 percent (31 percent female)

Sources: CONFEMEN (2003); *World Education Report: Teachers and teaching in a changing world* (1998) New York:

Program purpose & strategy

As noted above, FIMG was created in response to the growing need for teachers and the realization that Guinea's normal schools could not meet the demand on their own. FIMG was established with the following aims:

- increase the number of teachers trained per year
- train teachers in a shorter period of time
- place greater emphasis on practice
- hire teachers on a contractual basis (Allard 2002).

Placing greater emphasis on practice was perceived to be an important goal because until the founding of FIMG, one complaint about teacher training was that training was too "theoretical" – student teachers typically attended lecture-type courses, often with few materials or pedagogic supports, and though they were expected to do 3 months of practice teaching, in fact they often only taught for several weeks. Thus, the FIMG

designers set out to ensure that this new program would provide student teachers with adequate opportunities for both practice and reflection.

FIMG was also based on the fact that the MOE did not have the financial resources available to increase the teacher supply through public service contracts, which included tenure, benefits and relatively high wages. Accordingly, the FIMG program was designed to hire all graduates on a part-time contractual basis. Teachers would have to reapply each year for employment in the next, benefits would not be provided, and salaries would be fixed at approximately half of those of public service employees. Yet because of difficult economic conditions in Guinea at the time, these requirements seem not to have dissuaded students from enrolling in the program.

Entrance requirements

Initially, the Baccalaureate II (13th grade exit exam) was established as a minimum academic requirement for acceptance into the program. After the first intake, it was found that too few women were applying, so the entrance requirement was relaxed to Baccalaureate I for women (12th grade exit exam). After the first few intakes, the general pool of candidates began shrinking, so the BAC I became the requirement for all candidates. In addition, all candidates must pass an entrance exam focusing primarily on basic skills in French and math.

Structure of the program

Since its inception in 1998, the FIMG program has experimented with a variety of models that departed from the previous 3-year residential model. FIMG used an “alternating training model” (“modèle par alternance en formation”) based on the principle that there is pedagogical value in moving between periods of practice and reflection. At the same time, the model placed students in charge of a classroom for a full school year instead of the shorter periods of student teaching used in the previous model. The rationale was that practical education is critical: “the welder learns by welding.”

The first version of this alternating model was called the “3-9-3” emergency training model in which students followed an initial period of study of 3 months at a normal school followed 9 months of classroom teaching, then 3 more months of reflection and consolidation (“objectification”). The 9-month teaching period was divided into phases of observation, immersion (“impregnation”) and responsibility during which students were progressively introduced to the practice of teaching. Students’ key support people while they were teaching were the head teacher and an associate teacher in their school, who were trained in techniques of supervision, assessment, feedback and constructivist pedagogy. During their teaching year, student teachers were also visited by highly-trained educational tutors who, equipped with motorcycles, were to visit on average 20 students every two weeks to provide ongoing support, feedback and evaluation. Tutors were also to be expected to conduct meetings with groups of teachers at which problems were discussed and “fiches pédagogiques” or lesson activity sheets were developed for use in teaching.

After beginning training for the first cohort, FIMG instituted a variation on 3-9-3 called 9-9, or “regular training.” This followed the pattern of 3-9-3 but provided 9 months of initial training in a normal school followed by 9 months of teaching, retaining the observation, immersion and responsibility structure, after which they received their teaching certificate.

Both the 3-9-3 and 9-9 models were viewed as significant improvements over the 3-year pre-service model (see *Evaluation* below). However, the main complaint being received from the field was that the academic background of student teachers was still too weak to teach the basic subjects correctly. Thus, a third model was developed called the “3-3-9-3” model in which all students teachers would begin their training with 3 months of academic reinforcement or refresher courses, especially in French and mathematics, then continue with professional studies in the following 3 months, do their classroom teaching for 9 months (with the observation, immersion and responsibility structure), then return to the normal school for 3 months of reflection and consolidation. All told, the 3-3-9-3 model spans 18 months of teacher preparation. At the time of this writing, Guinea is exclusively using the 3-3-9-3 model for the pre-service training of all its new teachers.

In addition to the structural differences between the traditional and FIMG models, the other significant change was in content: while the traditional pre-service model focused on the teaching of academic subjects and pedagogy associated with them, FIMG focused on pedagogical methods and child development.

For a list of FIMG courses and hours, see Annex C.

Output

As can be seen from the two tables below, the number of teachers trained per year on average jumped from 312 with the pre-service model to 1,121 (939 deployed) with FIMG:

Table 6: Number of teachers trained in traditional pre-service model, per year

<i>Date</i>	<i>Number trained</i>	<i>percent women</i>
96-97	228	42%
97-98	396	34%
Total	624	38%

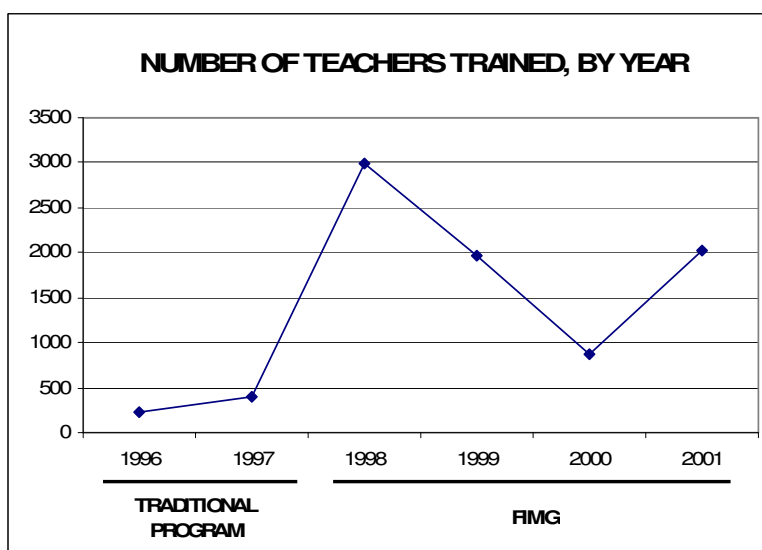
Note : The above table provides the number of students enrolled in the teacher training pre-service program; data were not available concerning the number of teachers deployed, though in informal interviews, the program director said that virtually all graduates were employed. **Source:** Service d'études, statistiques et cartes scolaire/MET-FP.

Table 7: Number of teachers trained in FIMG, per year

<i>Date</i>	<i>Cohort</i>	<i>Number trained</i>	<i>% women</i>
Aug-98	1	1,534	25%
Nov-98	2	1,451	36%
Oct-99	3	1,967	44%
Jul-00	4	768	34%
Oct-00	5	431	47%
Jul-01	6	783	43%
Oct-01	7	1,233	41%
Total		8,167	37.5%

Source: Ministry of Vocational Education and Professional Training (Ministère de l'Enseignement Technique et de la Formation Professionnelle), Guinea.

Figure 4: Average number of teachers trained per year



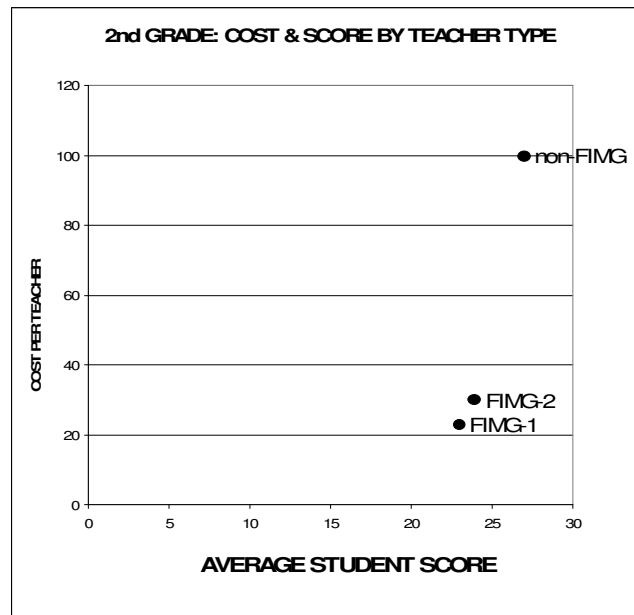
Cost

The CONFEMEN (2003) study also provided some information on the cost-effectiveness of the traditional 3-year program and FIMG. Because researchers were unable to obtain reliable cost data for either program, they used unit training costs per month for each program: 27 months for the traditional training model (9 months per year) 8 months for the FIMG 9-9 training model.⁹ Using 100 as a reference point for the cost of “non-FIMG”

⁹ The first FIMG cohort had received 6 months of initial training; the second cohort 8 months. Calculation assumes comparable unit costs between traditional and FIMG programs. The CONFEMEN study does not explain if supervision costs for practice teaching were incurred in the FIMG model; if so, they were not calculated in this exercise.

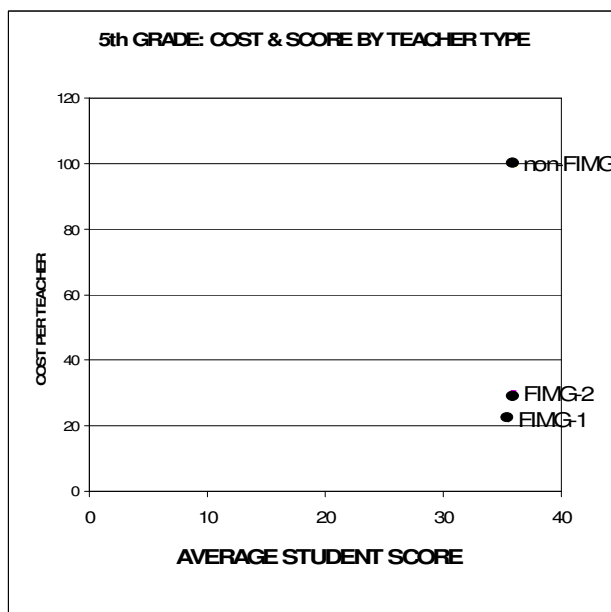
training, calculations indicated that the cost of FIMG training was 22.2 for FIMG cohort 1 (or 22.2% the cost of non-FIMG training) and 29.6 for FIMG cohort 2 (p. 57). The CONFEMEN study's authors acknowledge that this is a crude measure; however, the costs do indicate a significant difference between traditional and FIMG training. Dembele (2003) noted that in absolute terms, the cost per FIMG student was \$677, though he does not explain how he arrived at this figure. Though these figures do not predict long-term trends, they do suggest that the FIMG model of teacher training is markedly less expensive – according to CONFEMEN, perhaps only 1/3 as expensive – as the traditional 3-year pre-service model. Moreover, these cost savings were realized without reducing the quality of student learning.

Figure 5: Comparison of training models, Grade 2, FIMG/Guinea



Source: Reconstructed from figure in CONFEMEN (2003: 58)

Figure 6: Comparison of training models, Grade 5, FIMG/Guinea



Source: Reconstructed from figure in CONFEMEN (2003: 59)

Evaluation

In general, the data on the impact of the FIMG program are impressive. A study conducted by the Consortium International de Développement en Éducation (2002) found that all major stakeholders in the educational system, from ministry officials to normal school professors to headmasters to parents, were as satisfied with the FIMG program as they were with its predecessor. In particular, the normal school professors and student teacher supervisors noted substantially better competencies amongst FIMG students than their predecessors. The study also observed both “traditionally trained” and FIMG teachers in the classroom and found that the FIMG teachers performed slightly better (Allard 2002).

In another study, CONFEMEN (2003) correlated student achievement in grades 2 and 5 in French and mathematics with type of teacher training as a measure of teacher performance. Only 2 FIMG cohorts were included in the study, the first using the 3-9-3 model and the second using the 9-9 one. The study found that traditionally trained teachers performed measurably better in 2nd grade, especially in math, than the first FIMG cohort – this perhaps due to the difficulties encountered when launching the FIMG program. However, no significant difference was found between the traditionally trained teachers and the first FIMG cohort at the 5th grade level.¹⁰ When comparing the performance of traditionally-trained teachers with that of the second FIMG cohort, scores were roughly equivalent.

¹⁰ Interestingly, FIMG students from the first cohort were also less egalitarian in their teaching than the second cohort, enabling stronger students to make more progress than the weaker ones.

Table 8: Student performance by type of teacher

<i>Cohort</i>	<i>2nd grade</i>	<i>5th grade</i>
FIMG cohort 1: 3-9-3	22.7	35.5
FIMG cohort 2: 9-9	24.8	36
Non-FIMG (pre-service)	27.5	35.7

Source: CONFEMEN (2003)

These positive reports notwithstanding, FIMG has suffered some of the same difficulties as the MIITEP and TDMS programs. In particular, as noted above, anecdotal reports from the field indicated that school personnel and regional education officers were extremely dissatisfied with the academic qualifications of students graduated in earlier cohorts – a finding that led, in part, to the addition of the first 3-month period of training in which students reinforce their academic knowledge. The problem has also suffered significant administrative problems in terms of funding flows, timely production of materials and training of tutors, and developing entrance exams and admission protocols (particularly the problem of corruption on the part of applicants using phony identification papers), causing the dip in enrollments depicted in Figure 4. And although the curriculum materials of the program were reportedly well-developed and structured, students and tutors alike had enormous difficulties applying some of the child-centered elements such as teaching initial reading through project-based methods and the use of portfolios to assess pupil learning. In time, students simply ceased using these methods.

This consultant is currently conducting a study of the school-based studies component of the FIMG program. Preliminary findings indicate that the quality of field-based support has been one of the biggest issues of the program. First, head teachers and associate teachers were often not trained, or not trained sufficiently, to fully understand their roles. They also received no material support which de-motivated many of them. Second, though field-based tutors supposed to visit their students every two weeks, they were often unable to meet this requirement: students in more remote schools spoke of being visited once per term (3 terms per year). This was due partly to an ambitious supervision schedule, and partly due to school selection practices: though regional education were instructed to place students in close proximity to one another and near urban centers to facilitate regular contact by their tutors, the officials overlooked these instructions and instead placed many students in more remote rural schools where more experienced teachers were unwilling to teach. This decision made mutual support meetings and frequent visits by tutors impossible for many students. Finally, because support was so difficult, some students complained of feeling lonely and abandoned in remote schools with little support and difficult living conditions.

Discussion

In contrast to MIITEP and TDMS, the case of Guinea offers the advantage of providing observational and student assessment data to measure the difference between pre-service and in-service models. Of course, even if FIMG teachers performed roughly the same as teachers trained in the conventional program, this does not mean that they were performing as well as we might wish since no objective measure was used; future measures should seek to tie observation results to other reference points.

That said, several patterns emerge when examining the MIITEP, TDMS and FIMG programs side-by-side:

- they were all able to get teachers into schools more quickly than their countries' pre-service programs
- they all contained two components: residential training conducted at teachers' colleges and periods of teaching (1 year in Guinea, 2 in Malawi and 3 in Uganda)
- they all reported roughly the same output numbers – around 2,000 to 3,000 teachers on average per year
- though data are lacking on Uganda, it appears that all programs were able to train teachers at significantly lower cost than the pre-service programs.

In several ways, the FIMG and MIITEP programs are the most similar. Both programs replaced their pre-service programs with their in-service ones (though to this author's knowledge, the FIMG has made no official decision to abandon the pre-service program definitively). Both programs have experienced significant difficulties in the implementation of the school-based support component of the program. And both programs have struggled with the application of child-centered aspects of the curriculum. In the case of MIITEP, both training and teaching remained teacher-centered in spite of the explicit intent to achieve the opposite; in the case of FIMG, child-centered methods such as the use of projects to teach reading and portfolio assessment were unsuccessful.

Of course the biggest difference between FIMG and MIITEP on the one hand and TDMS on the other is that the FIMG and MIITEP were only conceived as teacher training programs, and stop-gap ones at that. TDMS, on the other hand, was designed from the outset as a system-wide reform process, mobilizing everyone from education officials to school personnel to community members and volunteer mobilizers. Does this account for the apparent difference in success of TDMS, particularly its student support component? A more thorough examination of these programs would be instructive, for only by having comparable data on effectiveness and cost can we determine which factors contributed most powerfully to the ultimate success of each. In particular, such an examination might include standardized observation of teachers' performance, standardized assessments of student achievement, measurement of teacher understanding and adoption of child-centered teaching practices, and comparable cost information.

LESSONS FROM THE FIELD

Based on our discussion of teacher training programs in Guinea, Uganda, Malawi and elsewhere around the world, what important lessons can be drawn if we want to consider adopting specific models or adapting components of them to the Southern Sudanese context? The following is a list of some of the major lessons:

1. Make training practical. One of the most consistent lessons across programs is the importance of ensuring that teacher training be as practical as possible, which usually means that it is linked to teachers' teaching experiences and that it takes place as close to the school as possible (Carron and Châu 1996, UNESCO 2004, Evans 2004). This includes training that is ongoing and school-based as in the local recruitment models, cluster-based training or zonal as in the cases of MIITEP and TDMS. It also means that training is not just based on "chalk and talk," but that is based, in part, on issues that arise from lived experiences of practicing students (as in the Guinean example) combined with opportunities for discussion, troubleshooting and reflection – what Feiman & Nemser (2001) call "purposeful, integrated field experiences."

2. Modularize learning for student and pupils: Especially for new teachers, it is extremely helpful to modularize some component of the training program as done in MIITEP and TDMS. This enables student teachers to master new content and develop adequate study skills for continued professional development and lifelong learning, especially if modules are self-instructional as in the PTTP example from Nigeria. And by providing self-instructional materials for *children to use* in the primary school classroom, as was done in Nueva Escuela and IEP, a three-fold advantage is realized: (1) pupils become more autonomous learners, (2) the teacher's teaching load is reduced, and (3) teachers learn to become facilitators of learning – a central tenet of child-centered instruction – rather than repositories of knowledge as is typical of the transmission model of education. Finally, modularization of instruction makes it possible to bring training closer to the school, thereby rendering it more practical and relevant, linked to the learning needs of the pupils and bringing it closer to professional practice both in space and time (Coombe 1999).

3. Structure classroom materials: Related to the previous point, research has shown that especially for new and undertrained teachers, highly structured instructional methods and materials help teachers learn faster. Again, the Nueva Escuela and IEP programs are good examples, as is the IRI model. Another one is the Systematically-designed Structured Instructional Materials (SIMS) materials used in the Basic Education Support Project in Namibia in the late 1990s – a set of highly structured materials for use in English and maths classroom teaching in the early primary grades. Snyder & Voigts (1998) found that in classes where SIMS were used, learning achievement was greater than in control classes, and teachers exhibited more organized, effective pedagogical practice. They concluded that structure is important to instruction – in fact, perhaps more important than educational or training background of the teacher, but can be greatly enhanced by both if relevant to the situation (p. 251).

4. Provide adequate support and feedback: The importance of supervision and support mechanisms cannot be overstated, especially for new teachers. UNESCO (2004) notes that newly qualified teachers require strong support, especially during their first year on the job. Yet one of the most frequent reasons for the failure of in-service models is the lack of sufficient support for teachers during their practice (Evans 2004). As noted above, both MIITEP and FIMG struggled with this component. In Zimbabwe, ZINTEC ultimately foundered in large part because of “faulty logistics and the near-collapse of the system for students to be visited in schools” (Perraton 2000). The local recruitment models provide helpful guidance on the elements of quality support, including regular visits, a collegial (not punitive) relationship with the supervisor or mentor, opportunities to discuss problems and arrive at solutions together, ongoing assessment of student performance and provision of timely feedback.

5. Recruit young and untrained teachers: Mehrota & Buckland (1998) observe that teacher costs can be significantly reduced by employing unqualified personnel, and that good quality learning could still be achieved, but that much of the savings must be reinvested in development of curriculum and support materials, and in in-service training. Lewin (2003) adds that strategic use of untrained teachers, supported by orientation programs and school-based apprenticeship-like relationships (on-the-job training), could become a step on a pathway to initial qualification. The local recruitment models discussed above exemplify this approach. In another approach in currently being piloted in Guinea, women were recruited as teaching aids to alleviate sexual harassment of female

pupils while increasing gender equity in the teaching force.¹¹ In still another approach used in Mexico and Chile, young recruits were provided with short training courses, then placed in classrooms. According to Avalos (1980) this approach was successful perhaps not because of the training itself but because of “their enthusiasm and commitment to the task” (p. 48, cited in Demberle & Miaro-II 2003). Dembele & Miaro-II (2003) note the additional benefit that this type of group-age teaching and learning reproduces, to some extent, patterns of socialization and enculturation of youth typical of “traditional” African societies and might therefore be acceptable to Africans as they try to solve the problem of overcrowded classrooms and poor teaching and learning (p. 23). A critical factor in the success of many of these models has been the role communities play in meeting employment costs of untrained teachers and teacher aides, and in supplementing salaries and non-salary costs such as school construction or teacher housing.

6. Treat teachers as professionals: The MIITEP program description illustrates one of the critical problems with teacher training programs worldwide: the tendency to treat student teachers like children rather than like learners, colleagues and professionals. Yet if teacher training aims to develop professional competencies and sensibilities, then student teachers should be invited to participate in professional communities of practice, engaged in serious talk about teaching, learning, learners and other aspects of schooling as a medium of professional development (Feiman-Nemser 2001). Lewin and Stuart (2003) add that by engaging with and challenging students’ ideas more constructively, colleges might be able to play a role in breaking the traditional patterns of thought and behavior. To date, it appears that pre-service training does not achieve this.

7. Provide incentives: As discussed in *The issue of teacher motivation* above, a key component of any teacher development and support program is the incentives. UNESCO (2004) argues that best practice in ongoing professional support includes an incentive structure that lets teachers see the benefit of improving their practice and encourage schools to make better learning the heart of their educational vision. Such incentives, Craig et al argue (1998), must be provided not only to motivate teachers but also to provide equity between the status of teachers as well as develop uniform performance standards. Accreditation, they argue, needs to match the ongoing training undertaken by all teachers. A disservice is done to both teachers and the teaching profession if all teachers do not have the opportunity to gain equal professional qualifications, no matter what route is taken to attain them (p. 58).

8. Use pre-service institutions strategically: Above, we discussed the worldwide trend of shifting from a traditional pre-service to more in-service or “mixed-mode” structures of teacher training. Again, this shift does not mean that pre-service institutions no longer have a role in teacher development. In fact, many argue that they should play several crucial roles in training in the years ahead. First, they can be used to train small numbers of highly skilled teachers, particularly if the curriculum is coherent and relevant to the contexts in which teachers will actually be teaching (McGinn & Borden 1995, Bernard et al 2004). This might include high-value, hard to recruit and train staff like science teachers, headmasters, and other scarce staff (Evans 2004). Second, as in the TDMS example from Uganda, colleges can move away from being monotonic institutions focused purely on residential long course qualifications, towards becoming dynamically integrated nodes of innovation, professional development activity, and advisory support (Coombe 1999). Most importantly, whatever their exact function, they should be organized

¹¹ Interview with Jackie Kirk.

so that they are integrated into the school system – a significant departure from most institutions as they currently function:

In most countries, teacher education has evolved as a system that is completely separated from the school system. Teacher training institutions (TTI) produce teachers, certify them and send them on their way. The TTI has no responsibility for what happens after they produce the graduates. The linkages between the TTIs and the school system are weak or non-existent. What happens in the schools is someone else's problem. How the teachers actually perform in the schools is also not their concern. How then will teaching and learning in the schools be improved? (Evans 2004: 3)

If truly linked to the school systems, teacher training institutions could be challenged locally and nationally to make a real difference to learning in schools and the development of the human potential of the populations they serve (Coombe 1999).

9. Foster “pedagogical renewal”: Finally, we must ask a simple question: Training for what? What kind of teachers and learners do we wish to produce? How should teachers teach? What would we like their learners to be able to do? Dembele & Miaro-II (2003) offer one view:

We take pedagogical renewal to mean ‘*planned qualitative change toward desirable teaching practices, i.e., practices that ensure hoped-for student learning*’. This is a seemingly simplistic or narrow view of pedagogical renewal; but it is one that has far reaching implications.... There is agreement on what practices are not desirable, namely rigid, chalk-and-talk, teacher-centered/dominated, lecture-driven pedagogy, which places students in a passive role and limits their activity to memorizing facts and reciting them back to the teacher. This kind of teacher of pedagogy is generally labeled “traditional” teaching. There is also principled agreement on what practices are desirable, namely participatory, more interactive, child-centered, adventurous pedagogy characterized by cooperative learning and inquiry, with a view to foster conceptual understanding, critical thinking, and problem-solving skills. These desirable practices fall under the general category of “open-ended” instruction.

Of course there are many views on what constitutes quality instruction. The point here is that teacher training delivery structures are an important consideration for any government structure, but at the end of the day, structure exists to deliver content which should be coherent, feasible, and in line with goals of national development as well as current pedagogical thought. Teacher training programs succeed not only because structure is effective but because content is relevant and worthwhile. An effective teacher training system will be structured around a content “vision statement” such as the one above and it is ultimately the realization of this vision that provides the most reliable measure of the success of a program. (For additional ideas on educational perspectives of teacher training programs around the world, see Annex D: The new perspective of professional development.)

CONSIDERATIONS FOR SOUTHERN SUDAN

What to make of all these ideas in the context of Southern Sudan? Let’s revisit what we already know:

- Significant numbers of teachers will be needed for several years to come if Southern Sudan is to achieve the objective of Education For All.
- Southern Sudan's current capacity to produce teachers through its Teacher Training Institutes and in-service programs provided both by the SoE and its education partners is not sufficient to produce these teachers.
- In addition to sheer numbers, a variety of "cross-cutting issues" must also be considered in the recruitment and training of new teachers – e.g., regional equity, ethnic balance, gender equity in the teaching force, and language-appropriate recruitment and placement among others.
- Only by using a variety of methods of teacher recruitment and training are Southern Sudan's teacher needs likely to be met.

Whatever combination of approaches is chosen to meet Southern Sudan's teacher needs over the long term, our discussion of the potential of different types of teacher training systems suggests that in the near term, several steps would be advisable:

1. **Assess the potential teacher pool for Southern Sudan.** Based on an analysis of teacher needs and cultural factors (e.g., language, acceptability of different groups, etc.), develop a plan for the recruitment of trained teachers, either as secondary school leavers (to serve as salaried teachers), volunteers or contractors, from within our outside of Sudan. If volunteers require training, facilities at the TTIs and CECs could be shared. Though terms of service and salaries would probably not be completely harmonized (due to economic realities of volunteers' or contractors' home countries), policies should be carefully worked out and communities sensitized to the importance of these people at this critical stage in Sudan's development. Possible candidates include:
 - a. Secondary school leavers from within Sudan who can be candidates for the pre-service teacher training programs
 - b. P8 graduates from within Southern Sudan who can be candidates for the in-service teacher training programs
 - c. Returned Sudanese nationals, either from the diaspora or from refugee camps – e.g., Kaukouma refugee camp
 - d. Volunteer or contractual teachers from outside of Southern Sudan – e.g., Kenya, Uganda, Ethiopia.
2. **Assess the feasibility of developing a specialization for lower primary** (e.g., grades 1-3) **and upper primary** (e.g., grades 4-8) in order to better prepare teachers for the conditions they will face in Southern Sudanese schools. While all teachers could be prepared to teach at both levels, students could specialize in one level during training and wherever possible, be allocated to that level once deployed. This structure would have implications for the design of a national teacher training program. Teachers' wages and incentives at both levels would also need to be commensurate so as not to bias teachers toward teaching in the upper grades, as often occurs in other countries.
3. **Devise a short- and medium-term strategy for recruiting and training teachers** while keeping in mind numeric targets on the one hand (see table below), and level specialization on the other. For example:
 - *Pre-service training institutions* could be supported in order to be able to graduate 400-500 new teachers per year, focusing on hard-to-recruit teachers in subject areas requiring greater infrastructural support such as the sciences, and teaching in the lower primary levels, which involves more intensive use of instructional materials as well as critical training in early childhood psychology and teaching methodologies.

- *In-service/mixed-mode training:* Continue building the Education Support Network and the CEC infrastructure in order to enable students to benefit both from face-to-face instruction at the CECs as well as to continue teaching and studying over the course of the program. The ESN is a natural mixed mode design and, as such, should constitute the core of the overall training program in terms of numbers of students trained and level of resources allocated to its development, in particular for the development of infrastructure, the employment and ongoing training and support of tutors, and adequate investment in curriculum materials development and evaluation. In order to meet targets, numbers trained would need to reach nearly 2,000 per year.
- *Crash training programs:* In addition to the delivery of mixed mode training, develop the CEC and TTI infrastructure with an eye to being able to accommodate not only in-service/mixed-mode training programs but crash training programs as well. This might mean expanding facilities to accommodate (e.g., sleep and feed) larger numbers of people. This might also involve selecting sites that are in close proximity to already-existing lodging facilities and more easily accessible from major transport routes. Crash training programs could target the most underserved areas of the country, and should be linked to the in-service/mixed-mode structure so that crash program graduates could enter at a later stage and complete their training once basic skills are established. The program could be for a limited duration (e.g., 1-3 years) to provide approximately 2,000 teachers to the system.
- *Local recruitment models:* As with the crash training programs, small, locally-relevant programs should be developed to enhance the recruitment and training of teachers in hard-to-serve areas. While crash programs might be implemented regionally through TTIs or more locally through CECs, from which teachers would then be deployed, local recruitment approaches would focus on recruiting and training teachers at a more local level, perhaps in groups as small as 20-30 at the village or payam level. The emphasis would be on providing survival teaching skills, initially for lower elementary grades, so that classrooms could be staffed with local people in the near term, then be linked to the in-service/mixed-mode program as with the crash programs once teachers have received basic training and are established in their schools. Such a model would also provide fertile ground for small scale, locally-relevant pedagogical innovations such as the use of local language materials, structured materials approaches, the use of community aids in the schools, etc.
- *Other programs:* Make a determination as to how existing in-service teacher training programs in Southern Sudan (e.g., the Phase program) can be linked to the official Southern Sudan Teacher Education Program, both pre-service and in-service. Based on evaluation of quality and relevance, make a decision whether programs can support the teacher training effort, or if they cannot, how they should be phased out over time (for a list of alternative teacher training programs currently operating in Southern Sudan, see Annex E).

The following table provides an example of how such a plan might involve:

Table 10: Sample teacher projection table

SOURCE OF NEW TEACHERS	2005	2006	2007	2008	2009	2010
PRE-SERVICE TRAINING	38	285	470	470	470	470
IN-SERVICE TRAINING PROGRAM/ MIXED MODE	1,440	1,880	1,840	1,880	1,880	1,880
CRASH TRAINING PROGRAM		2,000				
STRUCTURED MATERIALS/ LOCAL RECRUIT.			500	500	500	500
OTHER PROGRAMS - E.G., PHASE TRAINING, FEMALE TEACHERS PROGRAM, ETC.	300	300	150			
VOLUNTEERS, CONTRACTORS, OTHER		50	75	100	200	200
TEACHERS TRAINED THIS YEAR	1,778	4,515	3,035	2,950	3,050	3,050
TOTAL TEACHERS IN SYSTEM	10,433	14,948	17,983	20,933	23,983	27,033
TARGET: TOTAL TEACHERS IN SYSTEM	12,000	15,000	18,000	21,000	24,000	27,000
SHORTFALL	(1,567)	(52)	(17)	(67)	(17)	33

Additional recommendations:

- Wherever possible, explore ways of harmonizing the Southern Sudan teacher education and primary school curricula (content, methods and language) with teacher education and primary school systems in Kenya and Uganda in order to facilitate the integration of returned Sudanese entering the teaching force, as well as the recruitment of Kenyan and Ugandan volunteer or contractual teachers.
- Seriously consider training models that allow for a short 1-time initial training session (e.g., 1-3 months), then allow the student to complete his/her work through distance training at the school/community level. This option would be more strategic for women because of pregnancy – if they are required to return annually for extended periods, as they are for example with the Phase training model, it is likely that at some point they will become pregnant and therefore be unable to return and therefore complete their training. Three years is a long time, and the future for many is uncertain!¹²

CONCLUSION

As noted above, teacher training everywhere in the world is a difficult task. No country is exempt from the vagaries of social change, demographic pressure, economic downturns, or citizens' rising expectations of their school systems. In Southern Sudan, the task is made more difficult by the challenges of creating an entire education system capable of recruiting and training teachers, educating pupils, and managing educational delivery – all at the same time, quickly, and literally from scratch.

Yet if this task seems daunting, it is also full of opportunity, for Southern Sudan is in a position to learn from its neighbors and create a system that is more likely to escape the problems they have suffered while at the same time capitalizing on their successes. For it is in the consideration of all the possibilities of fast-track teacher training programs that decision makers in Southern Sudan will arrive, not at “that perfect blend” of approaches that is, after all, elusive, but will arrive nevertheless at a package of approaches that

¹² My thanks to Jackie Kirk for providing this idea.

adequately responds to the needs and aspirations of the Southern Sudanese people, thereby promising a brighter educational future for its children for the generations to come.

ANNEXES

Annex A: Costs and effects of some teacher education programs

Currency: constant 1998 US\$

Country, program, date	GNP per capita at time of study		Student numbers	Average cost	Educational and cost impact
	Date Current US\$	1998 US\$			
Tanzania TTD 1979-84	1982 \$310	524	15,000 p.a. 45,000 total	\$1,863 per student p.a. 7316 per graduate	Effects comparable to conventional education. Cost about half conventional education
Brazil Logos II 1976-81	1978 \$1,650	4125	24,400	\$211 per student p.a. 741 per graduate	80 percent pass rate. Costs lower than alternative
Sri Lanka 1984-8	1986 \$410	610	c. 5,000	\$116 per student p.a.	Cost 1/6 - 1/3 of alternative. More effective than alternative for some subjects but less effective for others
Indonesia 1985-8	1986 530	788	c. 5,000	\$805 per student p.a.	Cost about 60 percent of equivalent. More effective than alternative in languages but less in maths
Nepal RETT Basic teacher course 1978-80	1979 \$130	292	3,000	\$196 per student p.a.	Cost slightly lower than alternative; completion rate 83 percent, pass rate 57 percent
Nigeria National Teachers Institute 1978-89	1984 \$730	1145	20,327	\$79 per student p.a.	Cost probably lower than regular colleges; completion rate estimated 42 percent, pass rate estimated 27 percent, both rates higher than at regular colleges
Pakistan Primary Teacher Orientation Course 1976-86	1981 \$330	592	83,658 enrolled 31,674 completed	\$107-149 per successful completer	Cost per AIQU graduate 45-70 percent of conventional university
Kenya in-service teacher training 1968-77	1972 \$180	661	790	\$806 per subject equivalent p.a.	Cost relatively high; favorable effect on access
Kenya University of Nairobi BEd 1986-90	1988 \$370	510	515	\$1,096 per student p.a.	Cost thought to be lower than cost of residential equivalent
Nigeria COSIT University of Lagos 1980-8	1984 \$730	1,145	2,000	\$345 per full-time student equivalent 1304 per graduate	If opportunity costs are omitted then cost per graduate slightly lower than residential campus cost
Uganda NITEP program 1993-7	1995 \$240	257	2,750	\$2,000 per successful student	Lower cost than equivalent

Source: Perraton and Creed 2000, in Creed, 2001. *The use of distance education for teachers*. Report for DFID.

Annex B: TDMS list of modules

<i>Topic</i>	<i>Title</i>
Cultural Studies Modules Module CE/1	Part 1: Art and Crafts
Cultural Education Modules Module CE/1	Part 2 : Music Education
Cultural Studies Modules Module CE/2	Part 1 : Moral Education
Cultural Studies Modules Module CE/2	Part 2 : Physical Education
English Language with Literature Modules EL/1	The Structure of English and Introduction to Teaching Primary English
English Language with Literature Modules EL/2	Teaching Primary English Revisited
Professional Education Studies Modules Module EP/1	Learning and Teaching in the Primary School
Professional Education Studies Modules Module EP/2	Dev. of Uganda's Ed System and Professional Teaching Skills
Mathematics Education Modules Module ME/1	Basic Numerical Concepts and Teaching Primary Mathematics
Mathematics Education Modules Module ME/2	Further Numerical Concepts and Modern Mathematics
Mathematics Education Modules Module ME/3	Measures, Probability and Statistics
Production Skills Modules Module PS/1	Production Agriculture
Production Skills Modules Module PS/2	Part 1 : Home Management
Production Skills Modules Module PS/3	Part 2 : Production Agriculture
Science with Health Education Module SH/1	Teaching Primary Science
Science with Health Education Module SH/2	Body Systems and Human Health
Social Studies Education Modules Module SS/1	Uganda's Environment and Teaching Primary Social Studies
Social Studies Education Modules Module SS/2	East Africa, Africa and the World

Annex C: Breakdown of course hours, FIMG program, Guinea

Teaching methods	Hours per week	X 13 weeks
French teaching methodology	10 (except 3 weeks)	124
Mathematics teaching methodology	6	78
Social sciences teaching methodology	3	39
Science and technology teaching methodology	3	39
Physical education and art teaching methodology	2	26
Childhood psychology		
Childhood development	2	26
General methodology	3	39
Organizing the classroom for instruction	2	26
Continuous assessment	3	39
Practical training (on-the-job training, 14 weeks)		
Total	34	436

Annex D: The new perspective of professional development

Excerpt from Villegas-Reimers (2003) Teacher professional development: an international review of the literature. Paris: UNESCO International Institute for Educational Planning.

The new perspective of professional development (from the literature, research, funding agencies and education reforms worldwide) has several characteristics:

1. It is based on constructivism rather than on a ‘transmission-oriented model’. As a consequence, teachers are treated as active learners who are engaged in the concrete tasks of teaching, assessment, observation and reflection.
2. It is perceived as a long-term process as it acknowledges the fact that teachers learn over time. As a result, a series of related experiences, rather than one-off presentations, is seen to be the most effective as it allows teachers to relate prior knowledge to new experiences. Regular follow-up support is regarded as an ‘indispensable catalyst of the change process.’
3. It is perceived as a process that takes place within a particular context. Contrary to the traditional staff development opportunities that did not relate “training” to actual classroom experiences, the most effective form of professional development is that which is based in schools and is related to the daily activities of teachers and learners. Schools are transformed into communities of learners, communities of inquiry, professional communities and caring communities because teachers are engaged in professional development activities. The most successful teacher development opportunities are “on-the-job learning” activities such as study groups, action research and portfolios.
4. Many identify this process as one that is intimately linked to school reform, as professional development is a process of culture building and not of mere skill training which is affected by the coherence of the school program. In this case, teachers are empowered as professionals, and therefore should receive the same treatment that they themselves are expected to give their students. A teacher professional development program that is not supported by the school or curricular reform is not effective.
5. A teacher is conceived of as a reflective practitioner, someone who enters the profession with a certain knowledge base, and who will acquire new knowledge and experiences based on that prior knowledge. In so doing, the role of professional development is to aid teachers in building new pedagogical theories and practices, and to help them develop their expertise in the fields.
6. Professional development is conceived of as a collaborative process. Even though there may be some opportunities for isolated work and reflection, most effective professional development occurs when there are meaningful interactions, not only among teachers themselves, but also between teachers, administrators, parents and other community members.
7. Professional development may look and be very different in diverse settings, and even within a single setting, it can have a variety of dimensions. There is not one form or model of professional development better than all others and which can be implemented in any institution, area or context. Schools and educators must evaluate their needs, cultural beliefs and practices in order to decide which

professional development model would be most beneficial to their particular situation. It is clear in the literature that different factors within a workplace (one significant variable of “the context”), such as school structure and school culture, can influence the teachers’ sense of efficacy and professional motivation. Apparent contradictory results reported in the literature, such as the fact that some studies conclude that the best professional development is that designed and implemented on a smaller scale, while others say that it is more effective when implemented on a larger, system-approach scale, may be explained, not by deciding that one study is more accurate than another, but by examining the contexts in which the different studies were completed... What works in one situation may not work in another... Because of the enormous variability in educational contexts, there will never be “one right answer”. Instead, there will be a collection of answers, each specific to a context. Our search must focus, therefore, on finding the *optimal mix* – that assortment of professional development processes and technologies that work best in a particular setting.

Annex E: Alternative teacher training programs and support in Southern Sudan

Some NGOs have developed alternative teacher training programs and delivery structures. As well as delivering teacher training, some organizations also deliver intensive English for teachers. The following are some of the alternative teacher training programs offered by organizations:

1. Two to four week teacher training workshops (organizations develop the content based on an assessment of the needs of the teachers);
2. Two year residential programs (Ugandan Teacher Training curriculum is followed along with sitting Ugandan exams and qualifications at the end – Primary Teacher’s Certificate Grade 3);
3. Two year residential program (Phase courses are taught and supplemented with Ugandan Teacher Training materials. Students do not sit Ugandan exams. The program is not certified);
4. Two year residential program (the emphasis is on academic subjects in first year then professional input in second year using Phase courses that are supplemented with other materials);
5. Two year teacher training program in St. Bakhita Formation Centre in Kitale, Kenya (students exit with a Kenyan certificate qualification - level 2). This certificate is endorsed by SoE. Teachers must be serving in a Diocese of Rumbek (DOR) school to be selected and must return and teach in a DOR school for a period of 2 years.
6. Some NGOs provide scholarships for teachers and school managers to be trained in Uganda as well as through distance learning. Some teachers and school managers are currently completing the following programs:
 - 2 years Primary Teaching Certificate Program
 - 2 years Diploma in Education, Primary (Education Managers)
 - 2 years Diploma in Education, Primary (Professional)
 - 2 years Diploma in Education, Secondary (professional)
 - 2 years Diploma in Teacher Education (Professional)
 - 9 months – 1year certificate in ECE/D Program

Source: Melican, Maree (2004) Meeting the Demand for Qualified Teachers in Southern Sudan: Teacher Training Report. Sudan Basic Education Program.

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