M U S T E R

Multi-Site Teacher Education Research Project

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Discussion Paper 2

The Costs and Financing of Teacher Education in Malawi

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Multi-Site Teacher Education Research Project (MUSTER)

MUSTER is a collaborative research project co-ordinated from the Centre for International Education at the University of Sussex Institute of Education. It has been developed in partnership with:

- 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.

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MUSTER is focused on generating new understandings of teacher education before, during and after the point of initial qualification as a teacher. Its concerns include exploring how new teachers are identified and selected for training programmes, how they acquire the skills they need to teach effectively, and how they experience training and induction into the teaching profession. The research includes analytical concerns with the structure and organisation of teacher education, the form and substance of teacher education curriculum, the identity, roles and cultural experience of trainee teachers, and the costs and probable benefits of different types of initial teacher training.

MUSTER is designed to provide opportunities to build research and evaluation capacity in teacher education in developing countries through active engagement with the research process from design, through data collection, to analysis and joint publication. Principal researchers lead teams in each country and are supported by three Sussex faculty and three graduate researchers.

This series of discussion papers has been created to provide an early opportunity to share output from sub-studies generated within MUSTER for comment and constructive criticism. Each paper takes a theme within or across countries and offers a view of work in progress.

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ABSTRACT

This monograph explores the costs and financing of teacher education in Malawi with particular reference to the Malawi Integrated Inservice Teacher Education Programme (MIITEP). First, it provides an overview of the national context in which teacher education takes place and profiles the unit costs of different levels of education. Sections two and three identify recent trends in development and explore the current status of the training institutions. Section four explains the current system of funding for teacher education colleges and identifies the main sources of costs. Section five presents data on internal efficiency issues. Section six presents data on the selection and placement of untrained teachers. Section seven examines likely patterns of future supply and demand for trained primary teachers and makes projections based on currently stated policy to establish what kinds of provision might be needed. Section eight revisits the question of costs per trainee and develops an analysis of current and future costs of training.

The last section contains some preliminary conclusions arising from the analysis as follows. Firstly, given that enrolment rates suggest current pupil-teacher ratios will rise, current teacher training capacity is unlikely to be able to meet demand and any attempt to do so will incur significant cost increases. Secondly, staffing levels in the colleges are declining. Thirdly, college infrastructure is in a poor condition and in need of improvement. Fourthly, school-based supervision of trainees is expensive and there are questions about its quality. Fifthly, the quality of teaching and learning in the colleges varies widely. Finally, there is a question mark over the validity and reliability of assessment procedures.

These conclusions lead to some policy-related observations: there is a pressing need for a decision to be taken about the future of MIITEP; it is difficult to see an alternative to MIITEP despite its limitations; and there is potential for the reinvigoration of MIITEP if certain weaknesses are acknowledged and strengths are built on.

1. OVERVIEW OF NATIONAL ISSUES

Malawi is one of the poorest countries in Africa with a GNP per capita of $US 170 in 1995 (750 $PPP). Adult illiteracy is estimated at 44% and is much greater amongst women than men (58% - 28%). Child mortality is amongst the highest in the world (234/1000 for children under 5 years). Malawi has a population of somewhat less than 10 million. Population growth was in excess of 3% but is now believed to have fallen to 2% or less. Over 45% of the population is under 15 years old. Most of the population is rural (85%) and is agriculturally dependent.

Historically Malawi has had some of the lowest enrolment rates in Sub-Saharan Africa. Gross enrolment rates averaged about 65% in the early 1990s and repeaters occupied 15-20% of all primary school places. It appears that more than 20% of grade 1 pupils drop-out before reaching grade 2. The number of pupils enrolled in grade 8, the end of the primary system, is currently about 17% of the number enrolled in grade 1, giving some idea of the magnitude of the attrition resulting from drop-out. Over the last two decades the transition rate into secondary schools from primary has rarely exceeded 10%. In 1996 about 120,000 pupils were in the final grade of primary schools and were competing for about 8000 new places in government secondary schools. Correcting this for repeaters gives a nominal transition rate of about 9%[1]. The secondary gross enrolment rate was estimated at about 4% in 1985 and had only reached 6% by 1995 (UNESCO 1998:141).

In 1994 the Malawi government adopted a policy of Free Primary Education designed to universalise access. This has resulted in a massive increase in the number of primary students – from about 1.9 million to about 3 million. Consequentially the proportion of the national education budget allocated to support primary schools has increased substantially. This has placed severe constraints on the financing of the primary school system and has generated a massive demand for increased teacher training.

Structurally, Malawi's school system consists of eight years of primary schooling followed by four years of secondary. In principle all children are eligible for free primary schooling provided through more than 3,700 primary schools. Progress through primary schools is determined by school promotion tests. In most grades repetition exceeds 15% and can be as high as 25%. Selection into secondary school is determined by the Malawi Primary School Leaving Examination. This allows less than 10% of those who sit to obtain secondary school places. Most enrolment is in government or grant-aided secondary schools (44,000). Over 100,000 are enrolled in Malawi College of Distance Education (MCDE) schools, which are largely supported by fee payments. These schools have been renamed Community Day Secondary Schools (CDSS). At the end of secondary the Malawi School Certificate examination controls access to post-school education and training. About 35% of pupils reaching this level pass these examinations in government schools but only 8% from Distance Education Centres.

[1] Excluding those enrolling in the Malawi College of Distance Education (now becoming the Community Day School System).

About 1,000 students per year are admitted into university level courses in the University of Malawi.

Primary school enrolments increased from about 900,000 in 1984 to about 1.9 million in 1994. After the introduction of free primary education (FPE) in 1994 primary school enrolments peaked at 3.2 million in 1994/5. Subsequently enrolments fell back to 2.9 million in 1995/6 and have now fallen to about 2.8 million (1999). Much of the expanded enrolment has been in grade 1 which increased from about 500,000 to over 1 million in the first year of implementation of FPE. In 1995/6 there were about 49,000 primary teachers in Malawi of whom many were unqualified. About 18,000 new unqualified primary teachers have been recruited - an increase in the total number of primary teachers by as much as 40% - to meet the demand for new teachers. These teachers are being paid at rates below those for fully qualified teachers (until they qualify). Nevertheless the budgetary impact of their salaries is substantial. The growth of primary school enrolments is shown below in Figure 1.

In 1985 Malawi allocated about 3.5% of its GNP to education. By 1997 this had risen to over 5%. The proportion of the public recurrent expenditure budget allocated to education has grown from about 11% in 1989 to 27% in 1994/5 and was projected at over 30% for 1998. Within these amounts primary education has seen its share increase from about 45% in 1990 to around 70% in 1994. The effects of the recent emphasis on primary schools are evident. Currently (1998) about 66% of the total recurrent budget is allocated to primary and over half the capital budget (Figure 2).

Figure 1: Primary Enrolments by Year

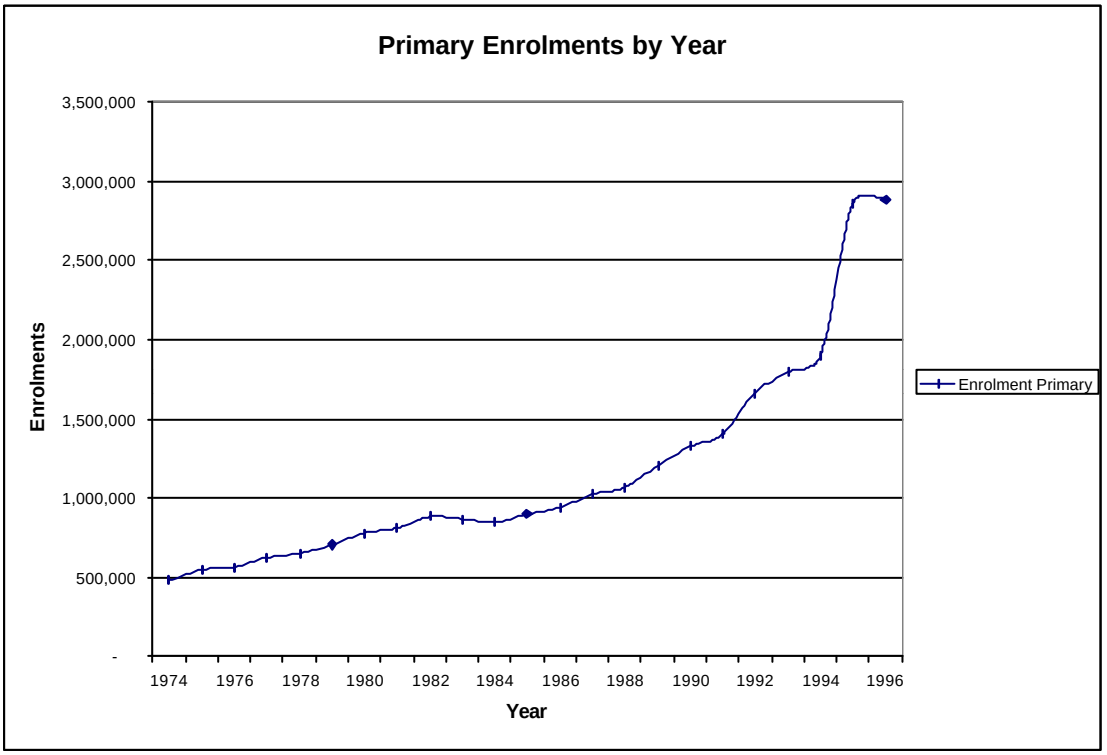
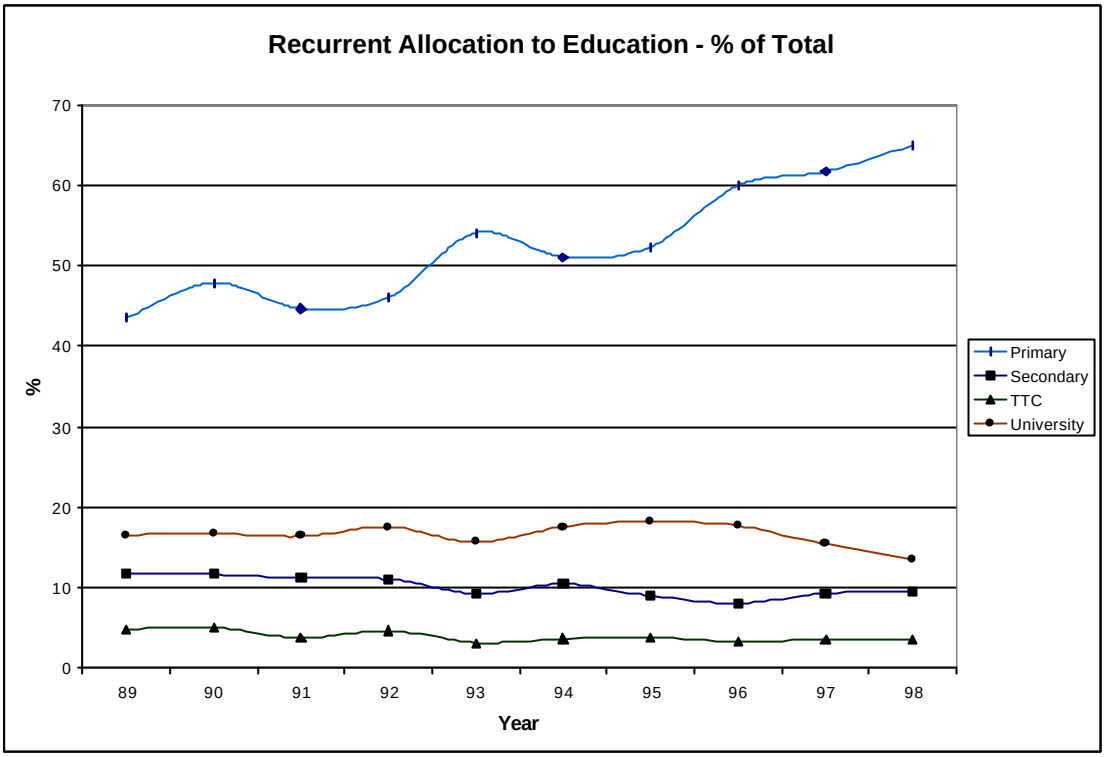


Figure 2: Recurrent Allocation to Education - % of Total



The allocations for Teacher Training cover the costs of the College training system. Currently this is fully engaged in providing training for the new groups of teachers recruited to meet the demand created by FPE. The Malawi Integrated In-service Teacher Education Project (MIITEP) provides short residential periods of training coupled with in-service support. Public expenditure on the TTCs includes a secondary teacher training College and excludes domestic and donor-supported costs outside the Colleges. Total allocation to the TTCs has fallen as a percentage of the total recurrent budget since 1990.

The chart also shows that allocations to the university are consistently more than those made for the secondary school system. Typically twice as much has been allocated to the university than to the secondary schools in most recent years.

Unit costs at different levels of the education system are shown below (Table 1)[2].

[2] Source: Ministry of Education with thanks to McPherson Jere and Mike Kiernan

Table 1: Unit Costs in MK in Current and Constant (1991) Prices

Current										
	89	90	91	92	93	94	95	96	97	98
Primary	30	39	39	37	70	84	81	195	244	344
Secondary	345	425	435	441	592	706	828	1315	1506	
TTC	1573	1886	1432	1880	2119	3178	5547	10510	5200	
University	5920	6690	6476	7318	11199	14990	22622	42793	42915	
Constant										
	89	90	91	92	93	94	95	96	97	98
Primary	40	43	39	33	52	49	32	45	43	56
Secondary	458	472	435	387	436	410	321	307	263	
TTC	2086	2093	1432	1650	1559	1846	2153	2452	907	
University	7853	7423	6476	6424	8242	8708	8782	9984	7484	

From Table 1 it can be seen that real unit costs have remained fairly constant in real terms at primary and have fallen at secondary. University unit costs have remained well over 100 times greater than those at primary. The unit cost of trainees in teacher training Colleges has varied as the system of training teachers has changed. Since this has involved changes in the length of training and the form of its delivery direct comparisons between years are not simple. Most recently the drop in real unit cost in 1997 reflects the introduction of the MIITEP training system. This annual unit cost applies to a programme that lasts for two years to produce a qualified teacher. It only reflects the costs of College-based work, not those of the field support system and therefore under estimates total costs per student.

The Policy and Investment Framework (PIF) provides details of educational policy commitments which relate to primary schools and teacher education. Inter alia from 1997 this has indicated commitments to:

- A pupil-teacher ratio of 60:1 across the primary school system to be achieved through MIITEP training of approximately 20,000 teachers

- A teaching classroom size of 60 pupils per class

- A substantial increase in secondary school places to achieve a transition rate of 30% into Form 1 and a planned increase of 6,000 secondary teachers by 2005 working in an integrated secondary school system.

- Upgrading of College of Education staff to degree level to improve the quality of learning and teaching in Colleges

- Decentralisation of education delivery services including those related to in-service support of new teachers.

Some of the implications of these commitments are explored later in this analysis.

2. RECENT DEVELOPMENT OF THE TEACHER EDUCATION SYSTEM

The teacher education system in Malawi developed from missionary origins. In 1973 there were 13 teacher training institutions with a capacity of 2,019. Only two of these were run by the government whilst the rest were church-owned. These small institutions were gradually rationalised so that by 1993 there were 7 with a capacity of 2968. All except two were government-run. By 1998 the number had declined to six and capacity had fallen to 2,730. Enrolment was generally less than capacity.

The basic requirement for enrolment into primary teacher training has been a Junior School Certificate. Candidates can accumulate grades over several years if they do not pass at the first attempt and are still considered as a result of a shortage of better-qualified applicants. In the past applications for teacher training places were advertised as and when new intakes were planned. The Ministry then shortlisted the candidates for interview. At interview the candidates were screened to establish suitability and check the authenticity of certificates. Successful candidates were notified in writing and advised which college they should report to. In the colleges trainees pursued the same courses regardless of whether they held a JCE or an MSCE certificate. Table 2 below shows the total enrolment in primary teacher colleges for 1st year and 2nd years by sex and grade from 1991/92 to 1995/96.

Table 2: Total Enrolment in Primary Teacher Training Colleges by Sex and by Course of Study 1991/92 - 1995/96

	1991/92		1992/93		1993/94		1994/95		1995/96	
Course	**Male**	**Female**	**Male**	**Female**	**Male**	**Female**	**Male**	**Female**	**Male**	**Female**
T3	1,148	623	1,198	982	1,214	944	963	467	996	475
T2	1,035	539	949	415	921	545	896	659	798	685
Total	2,183	1,162	2,147	1,397	2,135	1,489	1,859	1,126	1,794	1,160
Both sexes	3,345		3,544		3,624		3,085		2,954	

Female students made up 35% - 39% of the total. From 1991/92 to 1993/94 there were fewer female students holding MSCE certificates than female students holding JCE. However from 1994/95 there was an increase in females holding MSCE to 46% of trainees. Between 1991 and 1996 enrolments fluctuated because one college was converted to train secondary teachers and another was upgraded to university status.

Candidates with JCE graduate with a T3 qualification, and those with MSCE graduate with T2 teacher qualification. After successfully completing the courses, newly qualified teachers are posted to different districts by the Ministry depending on the demand. The District Education Offices then distribute the teachers to different schools. It is not clear what criteria the DEOs use in allocating teachers to schools because the primary school system has a very uneven distribution of teachers. At the school both T2 and T3 teachers are required to teach all subjects in any one standard from Std 1 to Std

8. Despite going through similar courses and having similar workloads at the school, T2 teachers receive a salary 25% higher than the T3 teachers.

Table 3 shows the output of the colleges[3]. These figures do not necessarily translate into teachers going into schools. Some decide to join other sectors of the job market.

Table 3: Primary Teacher Training College – Qualified Candidates Course of Study and Sex 1992 – 1996

Year	T2		T3		Total	
	Total	Female	Total	Female	Total	Female
1992	557	203	1309	465	1866	668
1993	516	119	1146	459	1662	578
1994	1309	403	1357	684	2666	1087
1995	1317	375	1110	573	2427	948
1996	1134	393	1394	671	2528	1064

The tutors in the colleges have a variety of qualifications ranging from certificates to graduate level degrees. Table 4 shows the number of tutors and their qualifications in teachers' colleges up to 1996.

Table 4: Number of Teaching Staff in Primary Teachers Training Colleges by Qualification 1991/92 - 1995/96

Teaching Staff	Years				
	1991/92	1992/93	1993/94	1994/95	1995/96
Graduates:	52	44	45	71	63
Diplomates:	131	145	148	233	207
Other	8	9	12	19	17
Total	191	198	205	325	287

Overall numbers of staff have fallen since 1995/6 as one College has been converted to secondary teacher training and another has become a University. From the table it can be seen that a high percentage of the tutors do not have degrees but teaching diplomas and certificates. Many of the tutors started their careers as primary teachers and were trained at this level. Subsequently a substantial proportion has acquired higher-level qualifications. There has been no specific programme to train teacher trainers. In 1995 there was a student population of 2,954, and a tutor population of 289, which gives a 1:10 tutor: student ratio. Although this looks a healthy ratio, morale among the tutors has often been described as low because of lack of promotional and educational incentives (MIE and MOEC, 1991).

Teacher training in Malawi government colleges was originally designed as pre-service training lasting two years. This was called the normal programme. Trainees were

[3] These output figures are those listed in the official statistics. They appear high when compared to college enrolments. This is because of the transition between course types and duration over the period. For part of the time a one year college programme was in place.

holders of JCE and MSCE certificates without any previous experience. This programme required candidates to spend one and half years in college and 6 weeks in schools doing supervised teaching practice. From 1981 to 1987 the output in all the colleges was about 700 to about 800 trained teachers per year.

In 1987 the Special One-Year Teacher Programme was introduced. The main aim was to train all untrained teachers in the system. Enrolment was restricted to candidates who were already teaching as untrained teachers. In the first year the training was conducted in two colleges. In subsequent years the special programme was confined to the newly constructed Domasi Teachers College only. In the first year 626 untrained teachers were certified and about 400 were trained in the second year (Nyirenda, 1988). The special programme was run concurrently with the normal two-year programme in different colleges. Only one college had both programmes running at the same time. Nyirenda (1988) and later Neumann (1994) noted that the special one-year programme was a replica of the two-year normal programme with two years of work squeezed into one year.

A new teacher-training programme called the Malawi Special Distance Teacher Education Programme (MASTEP) was launched in 1990. Its objective was to train 4000 primary school teachers in three years. This programme was supplementary to the 'normal' two-year programme. The rationale for introducing this programme was that the school enrolment growth rates had increased and that projections indicated that there would be a shortfall of 7,000 trained teachers in 1993. It was therefore believed that the most cost-effective option for producing such a teaching force was by instituting a distance mode programme in addition to the 'normal' programme.

Candidates for the programme were selected using entry requirements similar to the two-year 'normal' programme. After oral interviews trainees were registered as external students in teachers colleges and sent to schools to start teaching while at the same time studying self - study materials. The course lasted three years during which time students had supervised teaching three times per year; residential courses for two months a year; seminars and workshops twice a year; and lastly project write-ups and course work through the distance mode. Assessment was both continuous and by externally administered final examinations. After resits 99% of students passed the programme, yielding about 3,900 new teachers. About 75% of the costs of running the programme were used for student allowances and salaries and only 25% were spent on operational costs (CERT, 1995; MASTEP, 1994). An adjustment is needed in simple costs of this kind to reflect the fact that students spent two terms a year teaching in schools. The programme ended in 1993.

MASTEP and the two-year 'normal' course were unable to meet the demand for primary teachers. The Modified Normal Teacher Programme was introduced in 1993 as a result. In this programme recruits first had to teach for one year before being selected for one year of college work. In many respects this was a resurfacing of the one-year special teacher programme. In effect the 'normal' pre-service programme was abandoned and replaced by the modified programme. The curriculum for the modified programme was a two-year course compressed into a one-year course and suffered from

complaints that it was overloaded as a result. This programme was discontinued in 1996.

The current system of training was introduced to meet the needs for teachers created by the introduction of free primary education. 18,000 of the 22,000 recruited were untrained representing about 42% of the teaching force. The pressing problem was how to train these newly recruited untrained teachers in the shortest possible period of time. The arrangements that were put in place were initially *ad hoc*. Eventually the Malawi In-service Integrated Teacher Education Programme (MIITEP) was designed with the express aim of training the 18,000 untrained teachers between 1997 and 2000. All other forms of primary teacher training were then suspended.

The trainees for MIITEP are required to have a JCE or MSCE certificate, pass an oral interview, undergo an orientation course, and teach in primary schools for at least a year. They then qualify for a programme over six terms, the first of which is residential in a College. For the next five terms they teach under the supervision of school and zonal level staff and complete assignments and projects. At the end of this period they sit a qualifying exam during a one-month period at Colleges. Further details of the programme are given below in subsequent analysis. Insights into the initial operation of the programme to orientate untrained teachers are contained in Kunje and Stuart (1996). Further analysis of the MIITEP curriculum in action is available in Stuart and Kunje (2000) and Chirembo and Kunje (2000)

MIITEP remains the only system of certifying new primary teachers. It is clear from this historical account that it has several precursors in previous programmes and that similar kinds of mixed-mode courses have existed before. Its introduction was a necessity brought about by the announcement of free primary education and the accompanying enrolment growth. The question now is whether it will be continued in some modified form to meet future demand for teachers or whether other options are financially viable that could supply sufficient numbers of new teachers to meet demand.

3. CURRENT STATUS OF COLLEGES

The Colleges of Education now have about 175 staff according to the data we have collected (1999). The reduction in numbers since 1996 is partly because Mzuzu College became a University and staff were transferred and because one College was converted to secondary training. It is also because Colleges have lost staff who have not been replaced. This number of staff represents the resource available in the Colleges to support MIITEP at College level (Table 5).

Table 5: Number of Lecturers in Colleges and Nominal Student Capacity1999

College	Number of lecturers	Number of non-teaching staff	Capacity (Female)	Capacity (Male)	Capacity (Total)	Staff/Student Ratio
BTC	26	35	240	300	540	21
LTC	32			540	540	17
Karonga	28	25	100	200	300	11
Kasungu	28	6	200	400	600	21
St Joseph	23	20	300		300	13
St Montfort	38			450	450	12
Total	175	86	840	1890	2730	16

Staff-student ratios vary from 11:1 to 21:1. Thus Lilongwe TTC has a student capacity of 540 and 32 lecturers while St. Montfort has a capacity of 450 students and is allocated 38 lecturers. Karonga TTC with a student capacity of 300 has a team of 25 support staff while Kasungu TTC with a student capacity of 540 has a team of only 6 support staff. It appears there is no systematic way of allocating staff to the colleges according to standard ratios.

The current cadre of staff are concentrated in the older age groups. More than three-quarters are over 40 and a little under a half are over 45 years old. Well over half have completed 20 years service or will do so soon. Mandatory retirement age is 55 and pensions become payable on resignation after twenty years' service. Some staff have resigned to take up other forms of employment at this point. Mostly these join private secondary schools as teachers and various NGOs as trainers. Table 6 shows that over 12% of the teaching staff in college will reach mandatory retirement in the next five years. Our fieldwork suggests that apart from resigning and retiring the system also loses staff due to transfers to other posts, promotion and death. Apparently dismissals are very rare.

Table 6: Number of Staff by Age

	Over 50	46-50	40-45	34-39	Less than 33	Total
Blantyre	1	6	5	6	2	20
Lilongwe	2	12	8	3	1	26
Karonga	2	8	8	2		20
Kasungu	2	7	7	5	1	22
St Joseph's	1	8	6	5	1	21
St Montfort	3	3	6	7		19
Total	11	44	40	28	5	128

Table 7: Length of Service of College Staff in Years

College	Years of Service					Total
	0-5	6-10	11-15	16-20	21+	
BTC	3	2	3	7	17	32
LTC	0	4	3	6	19	32
Kasungu	2	2	7	7	14	32
St Joseph						
St Montfort						
Total	5	8	13	20	50	96

Tables 6 and 7 illuminate a disturbing feature of staff turnover in the teacher training colleges. Few have been recruited over the past 10 years. There appears to be no systematic recruitment procedure in teacher training colleges, which would provide a more balanced age structure. Most staff are fairly old and have worked for more than 10 years. This is a consequence of there having been no new training of teacher trainers since 1988. The cadre of teacher trainers that was produced is either in the Colleges or has been absorbed into other departments of the Ministry of Education. In the next five years as many as three-quarters of the staff will have completed 20 years of service and be eligible for retirement. Limited career pathways in the Colleges are a major reason why this may result in high rates of attrition since there are very few promoted posts. It is intended that the number of established posts in the Colleges will be increased with more posts at higher levels. If these planned posts are implemented (Table 8) it may help retain existing teacher trainers in the Colleges. Our estimates of primary teacher demand (below) suggest that there is an urgent need to address problems of age structure and attrition of staff in the Colleges.

Table 8: New Teacher Trainers Establishment

Post	Grade Old/New	Old	New
Principal	P6/P5	7	6
Dept Principal	P7/P6	7	6
Head of Dept	P8 or P7	22	218
Senior Lecturer	P8	6	168
Lecturer	PO	88	150
Total		130	548

The new teacher establishment provides for 62 new positions of lecturers, 162 senior lecturers, and 190 heads of department. The salary scale for principals has also been increased. We note that the old establishment is less than the number actually in post. However the new establishment projected is much greater than those currently working in the Colleges. The new establishment requires that all staff possess at least a first degree. Most current staff are not degree holders. It is likely to be difficult to attract a sufficient number of degree holders to the new posts. Promotion of those without degrees may also become an issue.

It was clear from the Colleges we visited that none of the Colleges appears to have a strategic plan for staffing or for identifying priorities for development in the short to medium term. Crisis management appears the common modus operandi. This may be a result of using personnel in acting positions for long periods of time since this creates uncertainty and undermines the authority and leadership role of the Principal. It is not clear that there is a clear progression through the structure which would prepare Principals for the responsibilities that they are given. Nor is it apparently the case that management training is provided to promoted staff.

4. THE SYSTEM OF COLLEGE FUNDING AND SOURCES OF COSTS IN COLLEGES

Under the decentralised budget system Colleges of Education receive money through the Regional Offices for the supply of services. Salaries of all teaching staff are paid from the Ministry payroll directly. A small number of ancillary employees are paid from College funds in some Colleges.

In principle each year Colleges estimate how much they will need to spend for budget line activities. In the accounts we have seen this is calculated on a historic basis adding a percentage to the previous year's expenditure headings unless an unusual commitment is anticipated. In the past these estimates were then negotiated with the Ministry and an amount agreed. Presumably this will now take place with Regional offices.

According to the 1997/98 approved estimates the budget for Blantyre T.T.C amounted to MK8,958,953. This in general covers items distributed under personal emoluments such as salaries and allowances and under goods and services which include among other things boarding, maintenance, water and sanitation, heating, transport, office services, teaching/learning materials, consumable stores and fuel. Table 9 is a typical example of budgeting for Blantyre T.T.C

Table 9: 1997/98 Approved Estimates For BTTC

Salaries etc	**MK**	**% of Total**
Salaries	1390375	15.6
Wages (non established staff)	138750	1.6
Professional Allowances	62500	0.7
Student Allowances	250000	2.8
Housing Allowance	187500	2.1
Sub-Total	**2029125**	**22.7**
Goods and Services		
Boarding	3387125	37.9
Consumable stores	171250	1.9
Maintenance of buildings and equipment	557750	6.2
Maintenance of Motor Vehicles	419000	4.7
Teaching/Learning Materials	286875	3.2
Stationery	106375	1.2
Internal Training	743750	8.3
Leave and allowances	85500	1.0
Travel and subsistence	211750	2.4
Telephone Charges	63750	0.7
Heating and Lighting	345250	3.9
Water and Sanitation	531250	5.9
Sub Total	**6909625**	**77.3**
Grand Total for BTC	**8938750**	**100.0**

Table 9 above shows that about 23% of the total budget is allocated to personal emoluments and specifically 17% of the budget is staff salaries. The personal emoluments are paid out directly to individuals by the Ministry of Education via the Divisional Offices. Goods and services are paid directly in the case of grant-aided colleges like St. Joseph's, or the colleges have to claim their expenditures from the divisional Offices as in the case of government colleges like BTC. This means that St. Joseph's runs a modest cash account while BTC never handles any cash.

Staff salaries at the Colleges are shown in Table 10. It should be noted that teachers' salaries at demonstration schools are also included in the college budgets. Each College has an attached school that it oversees and uses for teaching practice activities. The costs of these schools represent a greater proportion of the total costs in the smaller Colleges than in the larger ones. The costs per MIITEP student (3 cohorts) do not vary much on estimated expenditure. There are differences in the proportion of senior staff, which explain some of the variation. The different Colleges have different facilities, some of which require more support than others. The number of support staff varies but no data is available on this. Average staff salaries in the Colleges were about MK 30,000 in 1998/9 (data from St Joseph's and St Montfort). On-costs (pensions and other benefits) add perhaps 20%-25% on top of basic salaries.

Table 10: Average Salaries of Staff in Colleges per Staff and per Student

College	Number of Professional Staff	Total Establishment salary Budget MK (1998/9 Estimates)	Enrolment (3 cohorts)	Salary/Student MK
Karonga	28	1196600	1001	1195
Kasungu	28	1719431	1602	1073
Lilongwe	32	1921098	1575	1220
Blantyre	26	1821594	1502	1212

Blantyre TTC is supposed to run on a monthly subvention of MK577,485 excluding the salaries and allowances. In reality this far from being met as Table 11 shows. A similar trend of funding is experienced at St. Joseph's College. From January to December in 1998 the college claimed MK3,450,000 from the government grant. In total the government was able to release only MK810,000. Table 12 shows the funding regime for St. Joseph's College. It is clear from the two Tables that the funding regime is grossly inadequate when compared to the amounts needed identified by the budgeting exercise. BTC receives only 19.6% of its budgeted allocation and St. Joseph's only 23.5% of its claims. To make it worse the funding is very unpredictable. St. Joseph's has gone without funding for some months. Such erratic flows of funding have given rise to severe management problems at the colleges that in turn adversely affect the implementation of the curriculum.

Table 11: 1997/98 Funding For BTC

Month	Funding MK	Difference Income and Budgeted Requests MK
July	300000	277485
August	150000	427485
September	325000	252485
October	120000	475485
November	170000	387485
December	120000	457485
January	130000	447485
February	40000	407485
Total	1355000	3132880

Table 12: 1998 Funding For St. Joseph's College

Month	Funding MK	Difference Income and Monthly Exp. MK
January	300000	0
February	none	227709
March	40000	292550
April	20000	224123
May	150000	76408
June	none	343176
July	50000	282155
August	150000	113586
September	100000	174567
October	none	279496
November	none	315506
December	none	310725
Total	810000	2640000

This state of affairs is threatening the continued operation of the colleges. The meagre funds available have to be allocated to supporting boarding facilities and the related utilities. The dilapidated state of BTC is due to lack of maintenance, and absence of proper sanitation has left the college on the brink of closure. The food provided in the Colleges is described by both lecturers and students as the worst experience of college life. There is a glaring absence of expenditure on teaching and learning aids and books to the extent that at St Joseph's in 1999 nothing appears to have been spent. This indicates that support for the implementation of the curriculum has to take second place to other more pressing needs.

5. INTERNAL EFFICIENCY OF THE COLLEGES

The six Colleges of Education currently involved in primary teacher training have establishments of staff and student capacity as shown in Table 5. We have analysed teaching loads and the utilisation of space in two of the Colleges. The patterns are significantly different. Figure 3 shows the teaching loads at St. Joseph's. On average lecturers teach 12 or 13 periods a week. The least loaded is the principal with 8 periods per week. The Deputy has only 7 hours per week because he has combined his classes into double classes, otherwise he should have had 14 hours per week. Mathematics and science lecturers are most heavily loaded with as many as 17 hours per week. This would have increased to 21 if some of the classes were not combined together. Lecturers in foundation studies and arts have the lowest loads. Shortage of staff in the maths-science departments could account for the heavy teaching loads.

In addition to teaching, lecturers are required to supervise teaching practice two hours each week at nearby demonstration schools. Each lecturer has at most 20 students to supervise in the three months period a cohort stays in college. Given the numbers of students to a demonstration school the timetable allows a student to teach only once in a 30-35 minute period during the 3 month residential course. However the student has the opportunity to observe at least six other students teach.

Figure 4 shows the teaching loads at BTC. In contrast to St. Joseph's lecturers at BTC combine two classes into one and so teach 6 or 7 one-hour lectures per week on average. Some do considerably more and some less. The most heavily loaded are timetabled for 13 hours per week and the least loaded teach 5 hours per week. In reality some lecturers do teach more and may give additional tuition in the evenings.

As at St. Joseph's each lecturer at BTC is also required to supervise teaching practice two hours per week. Each lecturer has 24 students to supervise and each student has to be supervised once during a period of three months. This means that during the residential course a student will practice teaching one subject only for one 30-35 minute period. It also means that one lecturer is responsible for awarding a teaching practice grade on the basis of a single observation which is not moderated. Trainees must pass this assessment though they are not graded. In addition, due to the large numbers of students, some teach at the beginning of the term while others teach at the end of the term. Those teaching toward the end have an added advantage. They can develop skills by observing other students teaching and they have the benefit of the lectures over the course of the term.

Figure 3: Teaching Loads – St Joseph's

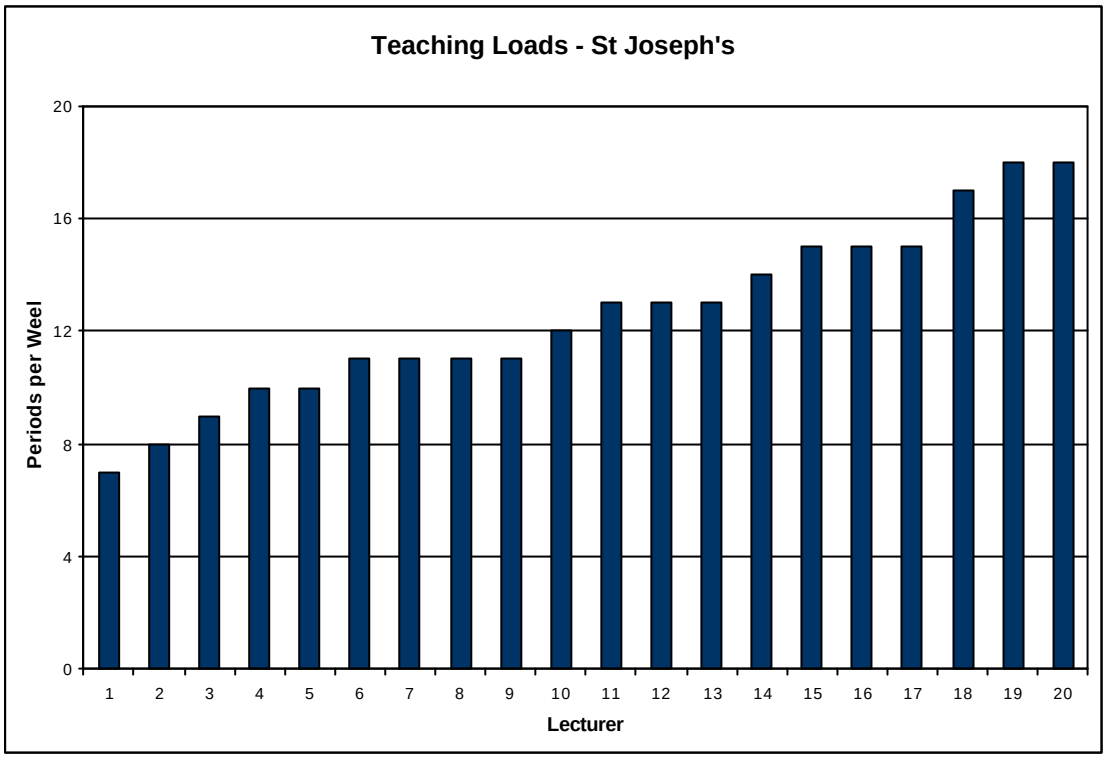
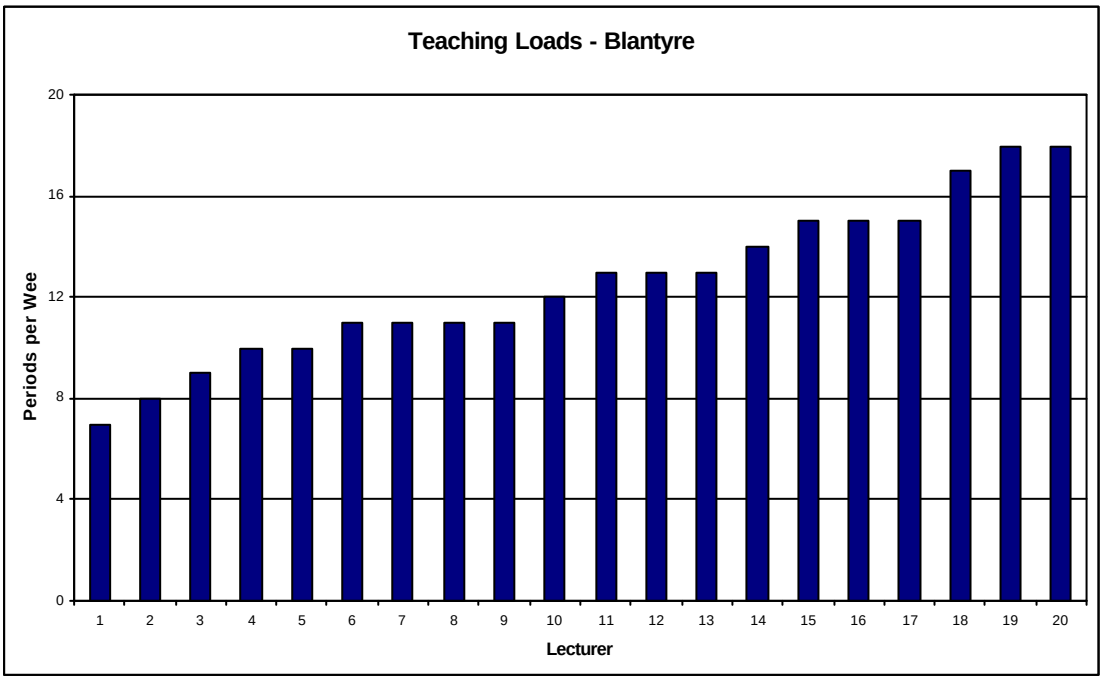


Figure 4: Teaching Loads - Blantyre



Apart from supervision lecturers are also asked to mark the work of previous cohorts. MANEB in conjunction with the Teacher Development Unit (TDU) send examination answer scripts, school-based assignments and school-based project write-ups to colleges

for marking. This means that lecturers are expected to mark the work of previous cohorts while they are also teaching another cohort. This takes up some of their time. One outcome of this scenario is that lecturers try to find time to mark this work by not giving exercises to the cohort in residence. It is thus not unexpected to find lecturers who are not able to tell the progress of their students. In fact there does not appear to exist any progress reports and the system does not demand them. Another outcome is that lecturers try to have as low teaching loads as possible by combining double classes.

5.1 Utilisation of Space

The frequency with which space is used in each College can be represented on a Chart. We have done this for two Colleges by first looking at the total number of rooms available for teaching purposes and the total number of hours of possible use for each room. Then from the timetable the actual number of hours of use is determined. This is then taken as a proportion of the total possible hours and the overall picture is depicted by a Figure.

At St. Joseph's there are 19 rooms which are meant for curriculum delivery. This figure includes classrooms, laboratories, lecture rooms and the library. In a day each classroom can be used for a total of six hours giving a maximum of 30 hours per week. In the case of the library it is possible to use it for 12 hours a day if it is opened from 8 o'clock in the morning until 8 o'clock in the evening during weekdays only. However students have access to the library for only one hour after classes giving a total of five hours per week out of a possible 60 hours. This is a modest figure because the library could also be opened during the weekend, which is not the case now. Figure 5 shows a graphical representation of space utilisation at St. Joseph's.

It is clear that the teaching space at St. Joseph's is utilised less than half the maximum possible time. Combining together two classes for teaching, non-use of some special rooms, and under use of others account for this situation. In essence there is enough teaching space at the college to allow more than double the number of teaching periods. This means that the college could accommodate more than double the current number of students if they were taught in the same way. The main constraints to this would be the amount of boarding space in the hostels, which is limited to 300, and the number of teaching staff.

The kitchen and dining space have a maximum capacity of 600. Building more hostel space seems to be one answer if the college is to be utilised to the maximum benefit. Rooms like the language laboratory, the audio-visual centre and the library are very underused.

Figure 5: Utilisation of Teaching Space – St Josephs

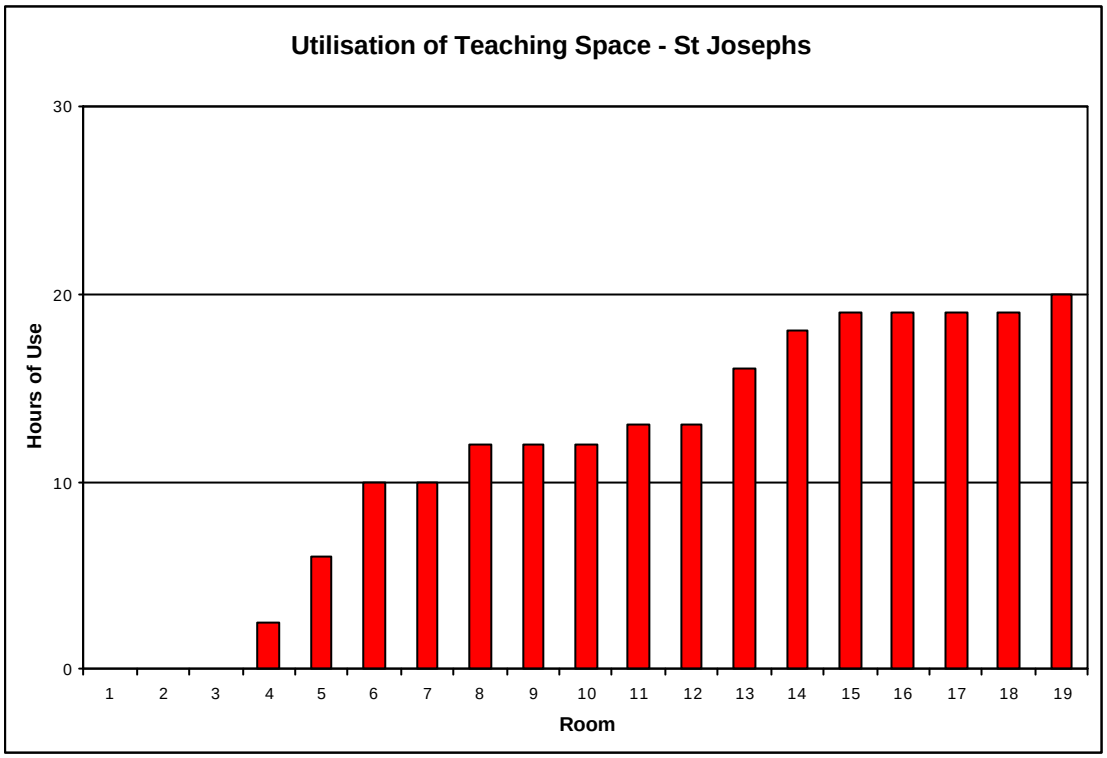


Figure 6: Utilisation of Teaching Space - Blantyre

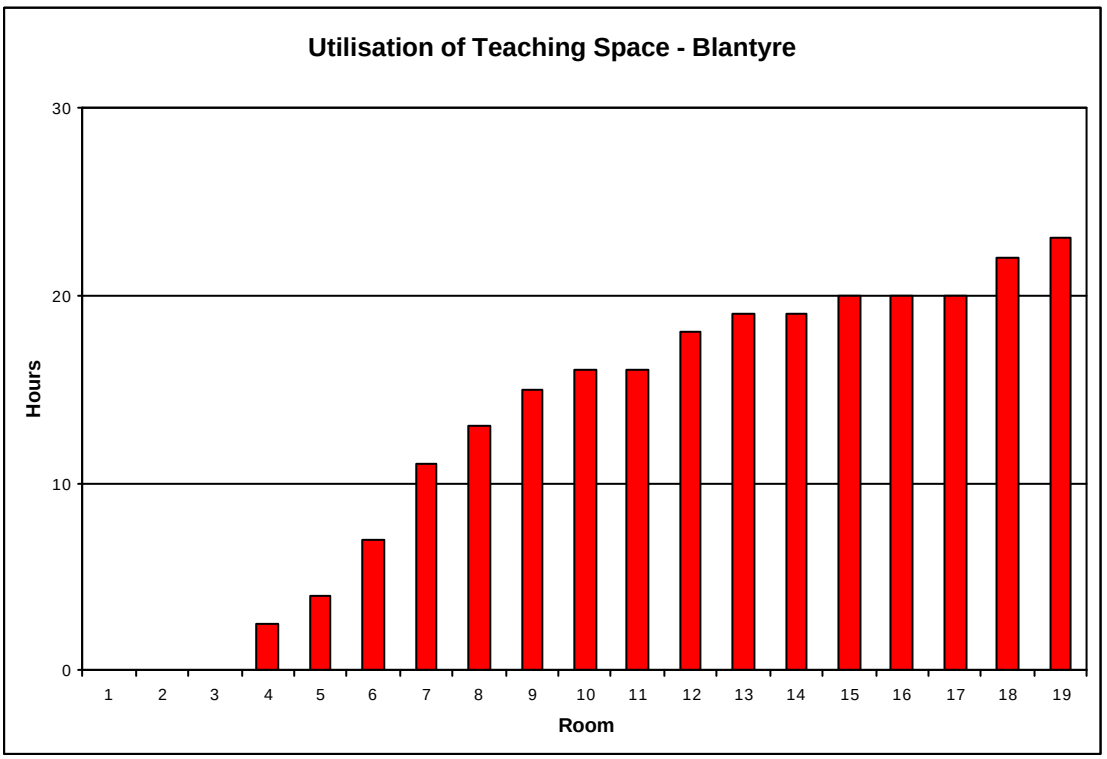


Figure 6 presents the use of space at Blantyre TTC. It shows a slightly more efficient use of teaching space overall (mainly because St Joseph's has more teaching rooms and fewer students). However, in this College all the lecturers decided to halve their contact hours by combining two classes in one teaching group. The College could accommodate more students and make fuller use of teaching space if boarding facilities were expanded. Alternatively lecturers could teach smaller groups more frequently. Lack of adequate funding has prevented much maintenance. As a result most of the rooms are not used during the evening because there are no lights.

5.2 Costs Per Student Derived from Budget Estimates in Four Colleges

Unit costs for Colleges of Education can be estimated from the budget estimates and the training capacity that is used. A first estimate of this for 1998/9 is provided below.

Table 13: Costs per Student in Four Colleges – Budget Estimates[4] 1998/9[5]

	Karonga	Kasungu	Lilongwe	Blantyre
Enrolment 98	1001	1602	1575	1502
Salary Related				
Salaries	1195	1073	1220	1213
Non Established Staff	131	156	111	111
Professional Allowances	0	0	86	0
Housing allowance	185	50	127	16
Non Salary				
Boarding	2566	1160	1313	1988
Consumable stores	224	127	156	144
Maintenance of Buildings	226	298	142	94
Maintenance of Motor Vehicles	236	84	175	186
Learning material and stationery	154	37	103	97
Internal Training	291	91	67	46
Leave and allowances	45	38	37	64
Travel and subsistence	399	135	160	302
Telephone and postage	124	99	48	77
Heating and Lighting	128	97	111	60
Water	154	17	130	88
Total	7059	5064	5561	5988

These costs per student are based on the enrolments of three cohorts of MIITEP in 1998/99 and on budgeted not actual expenditure. Since the salaries include those of teachers in the demonstration schools the estimates are higher than they would otherwise be but are nevertheless a guide. Differences in staff-student ratio will be part of the reason why salary costs vary. Costs will also vary depending on the area where Colleges are located and the range of facilities that they have to support. It is evident there are some wide differences between the Colleges in allocations to some budget heads which are not readily explicable. A detailed auditing would be needed to establish if these differences are defensible.

[4] These estimates do not necessarily reflect actual expenditure – see text.
[5] The budgets of the two private Colleges are not included in the national budget accounts.

6. SELECTION, ADMISSION AND PLACEMENT OF UNTRAINED TEACHERS

It has been possible to analyse the characteristics of untrained teachers most of whom are enrolled in MIITEP. The database indicates that most trainees have JCE qualifications from DECs (Malawi College of Distance Education schools). The next largest number have JCE from Government schools. It is noticeable that the proportion with MSCE is highest in cohort 1 and 3 but low in all other cohorts (Table 14).

Table 14: Qualifications of MIITEP Trainees and Other Untrained Teachers

Cohort	GCE	JCE Dist.	JCE Govt	MSCEDist.	MSCEGovt	Other	Total
1	14	9	7	615	1659	25	2330
2		1654	880	55	44	1	2636
3	12	707	200	421	1166	17	2526
4	1	1717	645	75	47	2	2491
5	5	1117	447	248	663	9	2494
6		1776	646	63	112	8	2611
Total	32	6980	2825	1477	3691	62	15067
Untrained	1	5561	1928	314	611	24	8439
Grand Total							23506

The age structure of MIITEP trainees is as shown below. 13% are between 30 and 40 years old and over 86% are under 30 (Table 15).

Table 15: Age of Untrained Teachers (%)

Cohort	Age		
	20-30	30-40	40+
1	90.6	8.8	0.6
2	71.2	27.0	1.8
3	90.5	8.9	0.6
4	75.2	23.1	1.7
5	88.9	10.5	0.6
6	90.8	9.0	0.3
Untrained	90.8	8.6	0.6
Total	86.6	12.6	0.8

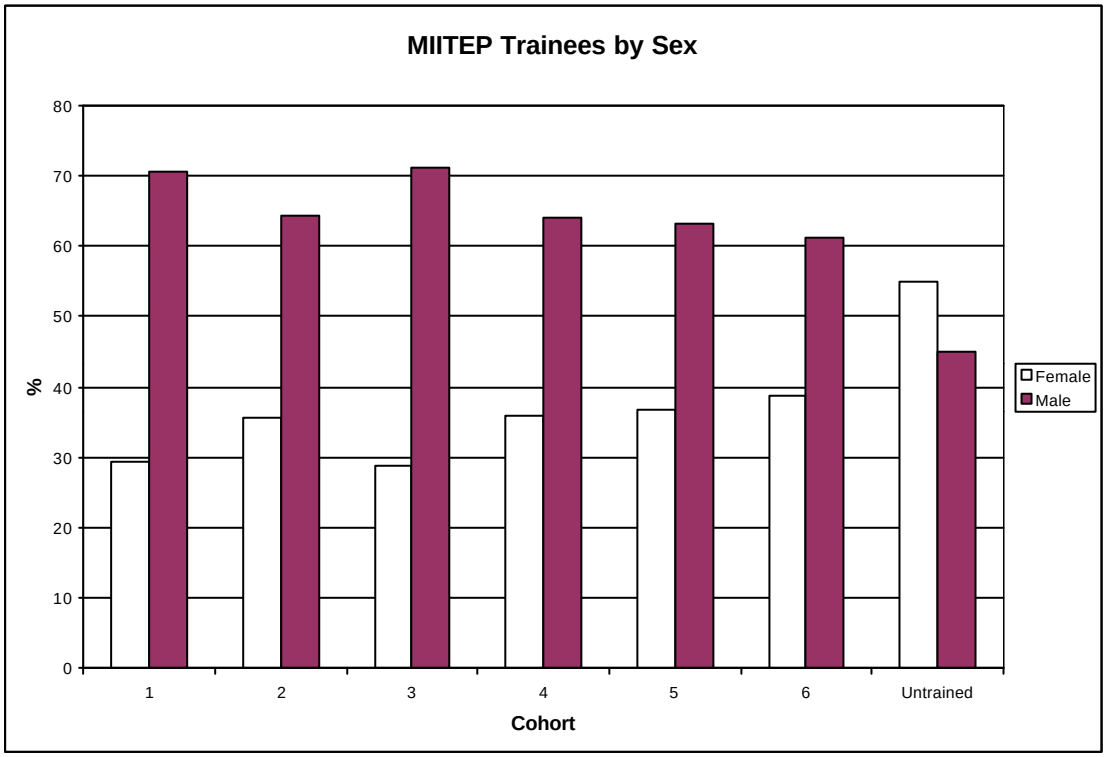
Untrained teachers were mostly appointed in 1994. The distribution of appointment dates is shown below for all untrained teachers appointed since 1993 (Table 16).

Table 16: Date of Appointment of Untrained Teachers

Date of Appointment	Number
94	13500
95	300
96	2556
97	6790
98	460
Total	23606

The distribution of trainees by sex is shown in Figure 7. Males outnumber females by 13,820 to 9,880 across all the cohorts. It is only amongst untrained teachers not in the MIITEP cohort that females outnumber males (by 4,640 to 3,800). Nationally 39% of primary teachers are female.

Figure 7: MIITEP Trainees by Sex



About two-thirds of untrained teachers are located in schools which have more than 50% untrained teachers. Data on small schools with enrolments of less than 500 indicates that well over three-quarters of the untrained teachers in these schools are in schools which have less than 50% trained teachers.

MIITEP 1998 data suggests that 32% of untrained teachers are in schools with less than 5 teachers and a further 38% in schools with less than 11 teachers (Table 17).

Table 17: Distribution of Untrained Teachers by Number of Schools

Number of Untrained Teachers in Schools	Number of Schools	%
1	255	1.1
2-5	7203	31.1
6-10	8732	37.8
11+	6937	30
Total	23127	100

Untrained teachers are often in schools with few trained teachers. 2% are where there are no trained teachers, 23% where there are 1 or 2, and 39% where there are 3-5 trained teachers (Table 18). Looked at another way 13% are in schools where more than 80% of teachers are untrained, and 48% where more than 60% are untrained. Only 5% are in schools where there are less than 20% untrained.

Table 18: Trained and Untrained Teachers – Distribution

Number of Trained Teachers in School	Number of Untrained Teachers in Schools	% of Total Number of Untrained Teachers	Average No. Untrained per School
0	388	1.7	3.7
1	2529	10.9	3.4
2	2843	12.2	4.3
3	2377	10.2	5.5
4	2352	10.1	5.7
5	2070	8.9	6.1
6-10	5446	23.4	6.8
11+	5222	22.5	6.8
Total	23227	100.0	

About 44% of untrained teachers teach in schools where pupil-teacher ratios are more than 60:1. Only 15% are in schools where the PTR is less than 40 (Table 19).

Table 19: Number of Untrained Teachers by School Pupil-teacher Ratio

Number of Untrained Teachers	Pupil-teacher Ratio in School	% of Total Untrained Teachers
54	200+	0.2
1384	100-200	6.0
8788	60-99	37.8
9518	40-59	41.0
2467	25-39	10.6
1027	Less than 25	4.4
23238		100.0

Data from the MIITEP allocation system in 1996 gives some indication of the physical provision in schools to which trainees were allocated. This suggests that about 11% were

posted to schools with no classrooms, 19% to schools where there were less than one-third the number of classrooms to classes, 39% where there were between one-third and two-thirds, and 18% where there were between two-thirds and enough classrooms for each class (Table20).

Table 20: Classroom to Classes Ratio in Schools to which MIITEP trainees were originally allocated.

Classroom to Number of Classes Ratio	Number of Trainees Placed	% of Trainees Placed
0	1797	10.5
0-0.33	3208	18.7
0.34-0.66	6646	38.7
0.76-1.0	3020	17.6
1.0+	2520	14.7
	17191	100.0

This profile of where MIITEP teachers are teaching is very significant. It draws attention to the extent to which training should prepare new teachers to work in schools where there are few trained teachers, large classes, few classrooms and limited support.

7. ANALYSIS OF TEACHER SUPPLY AND DEMAND

The central question that this section explores is what is the likely demand for primary teachers in the short and medium term? The answer to this question is important because it will determine what alternative methods of training are financially and logistically viable as the first phase of MIITEP reaches its conclusion. Decisions will have to be made within the next two years about the future modes of provision. In particular, if the numbers needed on a recurrent basis are within the capacity of the present College system, conventional full-time pre-career PRESET may be an option. If they are not, then either a system with a similar capacity to MIITEP to qualify large numbers of trainees is needed or substantial expansion of College enrolments has to be contemplated.

The Malawi primary education system has grown dramatically since the election of a new government and the consequent announcement of a free primary education policy. Enrolments grew from 1.8 million to about 3 million over no more than a year. As described above MIITEP was developed to train approximately 18,000 teachers over four years. At present this is the only method of training new primary teachers. It is apparently the case that no new teachers have been appointed to the establishment since the beginning of 1998. In 1997 3,000 were recruited to cover the gap created by MIITEP students during their full-time training period.

On the supply side a simple analysis can show some of the characteristics of those likely to be trained as new teachers. In 1997 the total number of pupils graduating from the secondary school system with passes in MSCE was about 8,000. The numbers with credits in English and in mathematics were about half of this. This represents the annual pool of those with this level of qualification. The MSCE pass rate appears to have been dropping which will reduce the numbers becoming available. Most of those who succeed are in government schools. The number passing JCE was about 61,000 with the great majority of successful candidates originating in the MCDE schools. Table 21 shows this.

Table 21: Pass Rates for Different Types of Schools 1997

	Number Sitting	Pass Rate (%)	Number Passing
	MSCE		
Govt	8692	58	5033
Private	4011	43	1713
MCDE	11503	11	1288
Total			8034
	JCE		
Govt	11507	93	10666
Private	4218	87	3657
MCDE	55868	83	46573
Total			60896

MSCE graduates are qualified for University and College entry. There appear to be about 1,500 places available each year. Secondary teacher training has been absorbing small numbers of MSCE graduates. This is planned to grow but it is unclear how many additional teachers will be required since the rate of expansion has not been determined (Ministry of Education 1996). If the PIF is implemented then several thousand new secondary teachers will be needed and these will be drawn from the ranks of MSCE graduates. A proportion of those graduating will not enter the labour market for domestic reasons e.g. marriage. A larger number will seek other forms of employment outside the education system. If 25% of MSCE graduates applied to teacher training about 2,000 would be available each year. Of these perhaps half or more would opt for secondary training if it is expanded leaving no more than about 1,000 to enter primary teacher training.

If primary teacher training is to continue on a substantial scale it is clear that in the short to medium term most applicants will continue to be JCE holders[6]. This was the case with the MIITEP recruitment and remains the case amongst those teachers who are untrained and not in MIITEP. Whatever training arrangements are devised needs to recognise this probable constraint.

Analysing demand is more complex. In 1997 the eight-year primary school system in Malawi enrolled 2.82 million pupils in over 3,700 schools. In 1997 43,400 teachers were listed as employed, about half of whom were classified as unqualified (Basic Education Statistics 1997). The Policy and Investment Framework for Malawi targets a pupil-teacher ratio of 60:1 for primary schools which generates a total demand for teachers of about 48,500 without adjustment for the fact not all teachers teach all the time or that some schools are over staffed. The currently approved teacher establishment is about 52,000. If the cadre were complete with teachers in post the PTR in 1997 would have been 54:1. This figure might be sufficient to include an adjustment for maldistribution of teachers and for small schools, which recognises that achieving 60:1 in most schools involves providing a larger number of teachers than 60:1 suggests.

However, 2,500 primary teachers are in MCDE/CDSSs not primary schools. This means that only 40,900 are teaching in primary schools. With total enrolment of 2.82 million pupils the actual average PTRs were about 69:1 during this period[7].

To put it another way if 52,000 teachers are needed to reach a PTR 54:1 (equivalent to 60:1 in most schools), then the shortfall of teachers is currently 11,100. A further 24,000 are untrained (including those who have not yet qualified through MIITEP) and these teachers will need upgrading to trained status.

Several refinements are needed to this simple analysis to establish the answer to the key question posed.

[6] The pass rate at MSCE further deteriorated in 1999 to average about 11%, thus worsening the supply side problem.

[7] The MIITEP 1998 database yields a school by school average ptr of about 74:1. The difference is largely explained by the different ways of calculating the average (i.e. total enrolment/total teachers or school by school).

First, a substantial proportion of the teachers who were untrained in 1997 have been enrolled in MIITEP and are in the process of qualifying. This is shown in Table 22. 16,200 were enrolled in the six Colleges of Education. The first cohort graduated in the first quarter of 1999.

Table 22: Enrolments by Cohort for Different Colleges

Cohort	College						Total
	Karonga	Kasungu	Lilongwe	Blantyre	St Montfort	St Joseph's	
1	267	581	519	513	439	310	2629
2	314	547	532	532	562	288	2775
3	288	546	496	513	494	204	2541
4	350	529	528	525	520	350	2802
5	305	544	470	432	434	297	2482
6	346	529	577	545	580	370	2947
							16176

Assuming 15% of MIITEP students fail to qualify or leave the programme, total output between January 1999 and January 2001 will be about 13,750, or 6,874 per year[8]. If 25% of those who start fail to finish successfully output will fall to 12,100, or 6,050 per year.

The most recent survey by MIITEP indicates that there are about 7,500 untrained teachers currently teaching who are not enrolled in MIITEP. The actual number may be marginally larger than this due to some non-returns to their survey. An estimate of 8000 needing training is therefore reasonable and consistent with the other figures above. Most of these untrained teachers who are not in MIITEP have a JCE qualification level. A recent survey indicates only about 800 have achieved MSCE passes. This means it is not feasible to require MSCE as a minimum entry requirement in the short term without excluding most untrained teachers.

Second, achieving a pupil-teacher ratio of 60:1 in most schools will require an average PTR of somewhat greater size. This is because PTRs are very unevenly distributed between schools and it is unrealistic to assume that even in a 10-year period such differences will disappear. Small under-enrolled schools and well-resourced urban schools popular with teachers may retain ratios well under 60:1; rural schools unpopular with teachers may continue to have PTRs over 100.

The most recent Ministry request to DEOs to identify surpluses and shortages of teachers in schools was based on a PTR of 60:1. Adjustments are included to take into account the need for schools to have a minimum of five teachers (one for each grade even if enrolments fall below 300 in five grade schools). This generates a demand for about 7,500 teachers. It is unclear how surpluses and shortages have been combined in this Ministry study. If the two have simply been added the result is an under-estimate since it will not be the case that all

[8] It appears tht 468 returned to Blantyre College for the examination period from Cohort 1. This compares with 513 initially enrolled. This is 11% attrition before the examination results are known.

teachers in schools with a surplus (PTR less than 60:1) can be re-deployed to those where there is a deficit. Actual demand may therefore be more than 7,500, and possibly as much as 10,000 depending on the viability of relocation. The PIF commits the Ministry of Education to build classrooms with a capacity for 60 pupils. This is inconsistent with a PTR of 60:1 since this does not include a margin to account for non-teaching heads and deputies. To achieve class sizes of 60 a PTR of closer to 50:1 is probably needed which would increase teacher demand by up to 20% above the figures projected.

Third, some primary teachers have migrated to the Malawi Distance Education College system. Between 1996 and 1997 the number of MCDE teachers increased by about 500. These teachers are mostly trained primary school teachers who continue to be paid from the primary school budget. If the community schools which are replacing MCDE schools continue to grow at this rate they will create an additional recurrent demand for trained primary teachers to replace those who leave primary teaching[9].

If secondary school enrolments were allowed to grow as planned to reach a 30% transition rate into Form 1 by 2005 the total number of pupils in the new public secondary system would need to grow. The PIF identifies a need for about 120,000 additional places implying that the number of secondary teachers would have to increase by about 15,000[10] if all were qualified and on the public payroll. What proportion of these new teachers would be upgraded primary teachers is unknown. It is plausible that a significant number of primary school teachers (especially those in MCDE schools) will upgrade their qualifications.

In any event it needs to be noted that all current MCDE teachers (2,470) are primary teachers paid from the primary budget and not teaching in primary schools[11]. Thus, as noted above, the number of primary teachers currently teaching in primary schools is not 43,400 but 40,930. This creates an additional demand to replace these teachers if the 60:1 PTR is to be realised. The future of MCDE teachers is uncertain but it seems that many may be offered the opportunity to upgrade to secondary status.

Fourth, attrition within the existing cadre of primary teachers will be a substantial source of recurrent demand for new teachers. There appear to have been 49,140 teachers in post in 1996 (Basic Education Statistics 1997) and 43,400 in 1997 in both cases including MIITEP trainees. If it is the case that during this period new teachers were not appointed then 5,500 teachers left the service equivalent to an attrition rate of 11% per annum. If annual attrition were only 7% then about 3000 teachers a year would need replacing.

Fifth, none of the calculations on demand vary assumptions about the current rates of repetition and drop-out. Currently enrolments in grade 8 (147,000) are 18% of those in grade 1 (817,500), primarily as a result of drop-out. If repetition were reduced enrolments would fall as pupils moved more rapidly through the system. If drop-out falls enrolments will

[9] As of 2000 the numbers of DEC/CDSS students have been capped. In principle this should stem the flow out of primary teaching into these schools. It remains to be seen if the policy will be effective.
[10] These estimates are approximations. A more detailed study is underway to offer a more refined analysis.
[11] This historic practice should change in 2000. so that all are paid from the secondary budget.

increase. The effects of such changes can be projected. Their magnitude depends on the rate at which repetition and drop-out fall in each grade.

The most likely short-term effect of successful reductions in repetition and drop-out is a net increase in enrolments. This is because drop-out appears highest in the lowest grades, whereas repetition rates are more evenly distributed and are highest in grade 8, which has the least enrolments (Table 23). Reducing the claimed 28% drop-out between grades 1 and 2 to 14% would increase enrolments in grade 2 by over 110,000 requiring more teachers in the short term to maintain the PTR. Simulations can estimate the effects of drop-out and repetition reduction (see below). If drop-out was reduced to an average of 5% and repetition to 7% over 10 years an additional 2,000-4,000 teachers a year would be needed to maintain PTRs for the first five years after which demand would begin to fall slowly.

Table 23: Repetition and Drop-out Rates by Grade 1997

Grade	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**Average**
Repetition	18	17	17	14	13	12	12	21	16
Drop-out between grades	28	16	18	13	14	12	9		16

Sixth, underlying all projections of teacher demand is the growth in the size of the school age cohort. If this is 2% per annum, it generates a demand for an additional 1,000 teachers per year, assuming full enrolment. If the cohort were not growing, which is unlikely, no additional teachers would be needed for this reason.

Table 24 accumulates the estimates of demand. The conclusion from the analysis is that annual training demand is between 9,000 and 14,000 if all government objectives were to be met and the assumptions above held true. It may be that some of the assumptions are unduly pessimistic and that in any case progress towards targets will be slower than anticipated. This would lower demand. Nevertheless an output of teachers similar to that planned for MIITEP is likely to be needed for a sustained period. The annual capacity of primary Colleges of Education is about 8,100 under the MIITEP system. Under a conventional full-time PRESET system annual capacity would be 2,700.

Table 24: Teacher Demand

Teacher Demand for 1999		
Current Establishment	52000	As gazetted
Teacher in Post 1997/8	43400	1998 MOE statistics
Number of primary teachers not teaching in primary schools but in MCDE/CDSSs	2500	
MIITEP replacements whilst on course	3000	
Shortfall in 1999	11100	If these were in post PTR would be 54:1
Training Needs - Backlog		
1. Untrained Teachers in system	24000	Within the total of 43400 employed
2. Enrolled in MIITEP	16000	
3. Unqualified teachers needing training not in MIITEP	8000	MIITEP data base 1998 survey
4. Additional teachers needed to reach establishment of 52,000	11100	
5. Training Demand – Backlog in 1999 (3+4)	19100	Number needing training if all 52000 teachers are trained
Annual Recurrent Demand	**Per Year**	
6. New migration to MCDE/CDSS	500 – 1000	1996-1997 = 500. Could be higher per year if CSS are developed into schools with much lower PTRs than in MCDE/CDSSs
7. Attrition of primary teacher cadre through retirement and death (attrition 7% or 11%)	3000-5500	1996/1997 attrition rate = 11% = 5,500 loss of teachers
8. Reduction in drop-out and repetition	1500-3000	FPE invites reduction in drop-out to increase completion rates. Demand depends on rate of reduction and on changes in repetition (see simulation).
9. Cohort growth	500-1000	1-2%
10. Total Annual demand (6+7+8+9)	5500-10500	
11.Backlog of untrained teaches in the system (8000) + teachers needed to reach establishment numbers (14100) = 19100 to be trained over 5 years = per year	3820	Assuming all untrained teachers currently in schools will be trained over 5 years, that MCDE/CDSS teachers will be replaced in primary schools, that MIITEP continues, and that the establishment is filled with new recruits.
12. Training Demand per Annum	9320-13820	
Output of Training System 1999		
13. MIITEP annual net output 1999	6050-6870	15%-25% attrition in MIITEP.

Teacher requirements for primary can be modelled to update the projections made in the PIF and examine the effects of different changes on demand. This has been done using an enrolment-driven model with the data initially obtained from the 1997/8 school census

statistical report and using the methods used in the PIF. For simplicity the consequences of changed enrolment and expenditure at secondary level have been omitted from this model. Depending on how rapidly secondary school enrolments grow, and what effect they have on the staffing of primary schools, secondary expansion may create additional demands for primary teachers as some upgrade to secondary status.

Simulation 1 allows drop-out and repetition rates to fall from current values to 5% over the next 10 years with the exception of grade 8 where repetition remains at 20% to account for examination retaking. The entry rate into grade 1 falls from its current value of about 190% to 130% as overage enrolment diminishes and there is less repetition in grade 1. Teacher attrition in the simulation is 7% p.a. The 1997 PIF assumes a rise in attrition rates to 7-8% by year 2000 (recent estimates suggest attrition may be higher). The growth rate of the school age cohort is estimated at 2%. As predicted enrolments and consequently teacher demand rise as a result of the dominant effect of drop-out reduction. In the longer term demand falls as the effects of lower repetition and a fall in the entry rate into grade 1 are felt. Annual demand peaks at about 7,500 in 2001. This does not account for the training needed to upgrade those untrained in the system, to replace those working in MCDE/CDSS schools, or to reach the establishment level of employment.

If the growth rate in the primary school age cohort falls from 2% to 1.5% the number of teachers needed will diminish. However, if attrition rates amongst teachers are not the 7% assumed in Simulation 1 but 11%, (11% appears to have been the attrition in 1996-1997), then the numbers needed will increase. The result of these adjustments is shown in Simulation 2. In simulation 2 demand peaks at nearly 10,000 teachers a year in 2002 as a result of reductions in drop-out, decreased repetition, cohort growth and attrition. Like Simulation 1 this does not include any reduction in the backlog of untrained teachers over and above those already enrolled in MIITEP, any replacement of MCDE/CDSS teachers not teaching at primary level, or any recruitment to establishment levels.

The Simulations confirm that primary teacher demand is very substantial and growing. It is of a size that implies that higher output is required from the teacher education system. In the absence of this, pupil-teacher ratios will increase and class sizes grow.

Figure 8: Simulation 1 Primary Teachers Needed

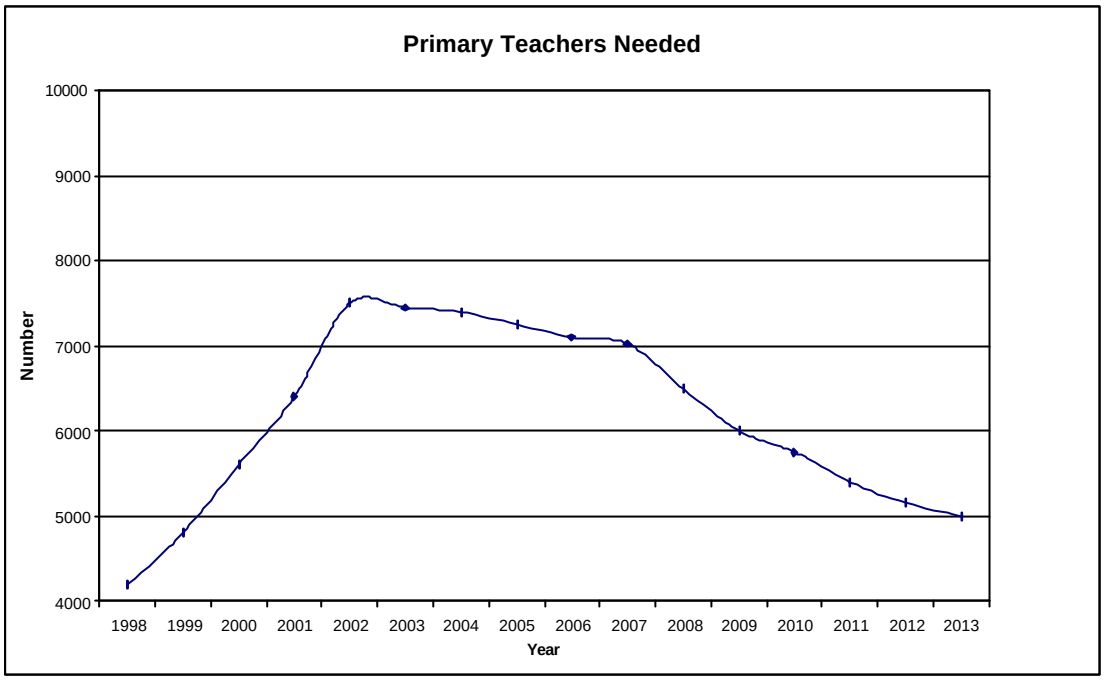
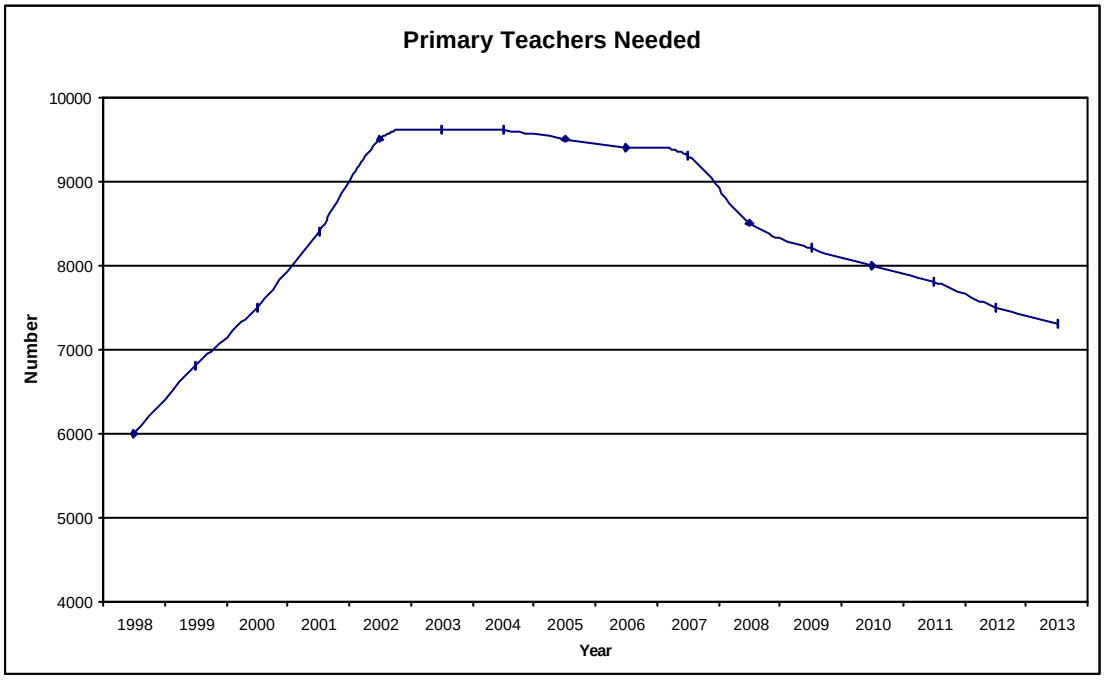


Figure 9: Simulation 2 Primary Teachers Needed



8. COST PER TRAINEE ANALYSIS

The MIITEP training system and aspects of its current status are described in detail in a number of documents (e.g. Bude et al 1995, GTZ 1995, DSE 1998, Malawi Integrated In-service Teacher Education Programme 1997a,b and c, and 1998). In brief the programme consists of a one-term residential course followed by four terms of supervised teaching in schools. In the sixth term trainees attend a one-month residential block, which includes final examinations. The profile of planned activity is shown in Table 25.

Table 25: MIITEP Programme Outline

Activity	Duration	Notes
Residential block at COE	11 weeks = 390 hours	
Self study modules	4 terms 220 hours	Assignments and projects supported by learning materials
Supervised teaching practice	5 terms 110 hours of supervised practice	Supervised by school staff
In-service training workshops	12 one day zonal workshops – 60 hours 12 assignments – 36 hours 4 projects – 354 hours	At Teacher Development Centres and in schools
Residential block and examination	4 weeks	At COEs

It appears that not all the planned inputs have been delivered. In particular, assignments and projects may not have received the support anticipated, the number of supervisory visits planned has been significantly less than intended, and zonal workshops have not occurred at the planned frequency (GTZ 1998, Project Progress Review).

The costing of MIITEP is complex. In the original plan the Government of Malawi provides six professionals associated with the Teacher Development Unit and a range of short term local experts from the Malawi Institute of Education, the University, the Colleges of Education, the University and the Ministry of Education. The 315 Primary Education Advisors and senior school staff are supposed to support trainees through various field activities.

Support for training activities which surround MIITEP – e.g. training of trainers, PEAs, headteachers is supported by the MOE from a World Bank loan So also are the curriculum review activities and the production of 5 MIITEP handbooks and other guidance and learning materials. GTZ provides three long-term experts – training and materials development, logistics and monitoring and evaluation. It also provides funds for short-term international consultancy, study tours, and project management along with office support costs including vehicles and computing equipment.

The original agreements provide for MK74 million loan assistance drawn from the International Development Association (IDA) support for the Primary Education

Project as a whole (World Bank 1995). This amounted to about US$5 million. GTZ agreed to contribute DM 4.5 million as grant aid (Table 26).

Table 26: MIITEP Planned Costs – World Bank Supported Elements[12]

Activity	Cost		
	MK Million	MK/trainee	US$/trainee
Investment Costs			
Sub Zonal seminars	5.6	311	21
Printing of training manuals	17.98	999	67
Projects, assignments, examinations	3	167	11
Mid Term Evaluation	1	56	4
Staff development	1.6	89	6
Pedagogic Support for Teachers			
School-based In service	4.7	261	17
Materials for in service	4.7	261	17
Sub Zonal in service training	16.9	939	63
Teaching and learning packages	7	389	26
Motorcycles	9.1	506	34
Running Costs			
Teacher Development Unit operating costs	0.15	8	1
Motorcycle operating costs	2.59	144	10
Total	74.32	4129	275

MIITEP benefits from support provided by other projects. Thus, for example, the Malawi School Support System Programme (MSSSP) trains PEAs and heads and deputy headteachers, is establishing the TDCs, and supports in-service programmes, all of which overlap with MIITEP activities. It also contributes to the costs of transport for PEAs visiting schools. DFID has provided 8.8 million pounds of grant aid for MSSSP over 5 years for its whole range of activities.

There are several reasons which create difficulties in establishing the true costs of MIITEP[13]. The first arises from lack of clarity in what is and is not a MIITEP activity and which receives complementary or overlapping funding from other sources. These issues cannot be resolved in the accounts available for this analysis. This is not least because of the aggregation of Teacher Development Programme activities into the single line item for Internal Training in the EDMU, which makes it impossible to unpack separate activities funded from different sources easily. It is also the case that some MIITEP activities appear to extend to wide constituencies which might be thought to cover needs over and above those directly related to the training of MIITEP trainees. Similarly other projects target similar groups of stakeholders to MIITEP with training and orientation activities, which complement MIITEP support but are funded from other sources.

[12] Conversion at 1US$ = MK$15 in 1995. In 1998 1US$= MK42. Unit costs based on 18000 trainees. MIITEP enrolment in 6 cohorts is 16200. This table does not include GTZ supported elements or account for overlaps with other projects.

[13] We are very grateful to Tim Cammack for assistance in interpreting budgetary issues.

Second, devaluation and inflation have had an unknown but substantial impact on project finances. Current exchange rates of 1US$= MK42 mean that the Kwacha value of the loans and grants will have increased nearly threefold. Detailed knowledge of disbursement patterns and inflation in prices, salaries, and allowances would be needed to determine the impact of this on the value of the support agreed.

Third, some scheduled activities for MIITEP have not taken place as originally planned. Thus it seems probable that many of the 12 sub-zonal workshops have not occurred and that presumably disbursement for these has not taken place.

This paper is concerned with the costs of MIITEP-style programmes and focuses on a forward view of their financial implications and sustainability. It is therefore important to arrive at estimates of the recurrent cost per trained teacher of maintaining such a system so that comparisons can be made with alternatives. In so far as the actual costs of the existing programme can be established they provide a guide to reasonable assumptions for a recurrent system. A large element of these costs is related to the development work necessary to establish the programme and to the associated international inputs. Though some proportion of these costs would continue if the system of training were continued, these on-going development costs would relate to after care and periodic revision of training materials. As a first proxy we have tried to cost elements of the training programme at current rates (January 1999) to establish some guidance as to the cost per trainee that would allow continuation of existing arrangements. The results are shown below (Table 27).

A number of notes are necessary to explain key assumptions. These include:

- 12 zonal meetings occur and PEAs make 2 visits a term for 5 terms to trainees.
- College lecturers visit trainees in school once each term.
- About 20 weeks of lecturers time is devoted to each cohort over two years (11 week block + 4 week block + visits) and salary apportioned accordingly.
- Trainees receive MK1500/month during training.
- The costs of an initial orientation period are included.
- Materials costs per student are US$25 for all guides etc.
- Central costs and overheads are distributed as shown.

Table 27: Projected Cost of Training – Cost per Trainee

	Cost/ Activity	Number	Cost/ trainee		cost/ 2500		cost/ 15000	
	MK		MK	US$	MK '000	US$ '000	MK '000	US$ '000
Field Support Costs								
Zonal Meetings - Trainees	150	12	1800	43	4500	107	27000	643
Zonal Meetings - PEAs	200	12	160	4	400	10	2400	57
PEA School Visits	300	10	3000	71	7500	179	45000	1071
COE supervisor visits	1000	5	5000	119	12500	298	75000	1786
Full-time Training Costs								
COE Teaching Salaries			1000	24	2500	60	15000	357
Trainees Salary 3mth			4500	107	11250	268	67500	1607
Trainees Salary 1mth			1500	36	3750	89	22500	536
COE boarding 3mth			2100	50	5250	125	31500	750
COE boarding 1mth			700	17	1750	42	10500	250
Orientation - non salary			1000	24	2500	60	15000	357
Orientation salary costs			500	12	1250	30	7500	179
Materials and Assessment								
External Exam costs	475	1	475	11	1188	28	7125	170
Internal Assessment costs	720	1	720	17	1800		10800	
Materials	1050	1	1050	25	2625	63	15750	375
Central Costs								
Admin			200	5	500	12	3000	71
Transport etc			200	5	500	12	3000	71
DEO Overhead (10% field costs)			496	12	1240	30	7440	177
COE overhead (50% salaries)			500	12	1250	30	7500	179
Total			**24901**	**593**	**62253**	**1439**	**373515**	**8636**

Various modifications could be made to this model. In particular if zonal meetings and PEA visiting were reduced in frequency (as has been the case in practice) this would have a significant downward effect on costs. It is also possible that such meetings and visits could be shared with other INSET support (notably the Malawi School System Support Programme) with an apportionment of costs. This is especially true for PEA visits, which probably should not be solely focused on MIITEP support given the costs and difficulty of transport.

School visits by College lectures have not taken place at the frequency suggested in MIITEP documentation. Indeed they could not. When MIITEP enrolled 6 cohorts simultaneously, five cohorts totalling about 12,500 trainees were in schools. If about 125 College lecturers were available for school visits this would imply 100 visits per term per lecturer, at the same time a cohort was being taught in the Colleges. With no more than about 60 working days in a term this is unlikely. A lower frequency of visits would reduce the costs.

The commitment of lecturers' time amounts to about 20 weeks over a two-year period per cohort. Lecturers' total workload will depend on the number of cohorts enrolled simultaneously. With only three cohorts enrolled, as is currently the case, about 30 weeks

per year are generated. If staff are not involved in any other activities then the full annual costs of their time should be charged to MIITEP. This would substantially increase costs.

Materials costs exclude development costs and might therefore be thought an under-estimate, especially if materials are to be revised and improved. Examination costs are substantial. Estimates (Gristock, 1999) suggest that Malawi National Examinations Board related costs are about MK475 = US$10.5 per candidate for the final examination alone. Other assessment-related costs internal to MIITEP (internal examination, projects, assignments) appear to be around MK720 (US$16). Depending on how projects, assignments and final examinations are organised and marked a cheaper arrangement might be feasible. Overhead costs are estimated. They may be higher depending on how they are apportioned and shared.

It has been suggested that payment is to be made for school-based supervision to heads and deputies. This would considerably increase the costs. At MK50/month for heads and deputy heads this would add MK2400 (US$57) per student. This would create a precedent that would seem undesirable.

This analysis indicates that a programme with the activities identified appears to cost about MK24,900 per student or US$560 at prevailing exchange rates. These costs are for two years of training. The cost per cohort of 2,500 is MK 62.3 million (US$ 1.35 million) and for 15,000 trainees MK 374 million (US$8.1 million). This excludes development costs, training of trainers, and international consultant support, all of which have been substantial. The distribution of costs is as shown below.

Table 28: Distribution of Costs per Student over Two Years

	MK	US$	Percent
Field Support Costs	**9960**	**237**	**40.0**
Zonal Meetings	1960	47	7.9
PEA Visits	3000	71	12.0
COE Visits	5000	119	20.1
Full-time Training Costs	**11300**	**269**	**45.4**
COE Salaries	1000	24	4.0
Trainees Salaries	6500	155	26.1
Boarding etc	3800	90	15.3
Materials and Assessment	**2245**	**53**	**9.0**
Materials	1050	25	4.2
Assessment	1195	28	4.8
Central Costs	**1396**	**33**	**5.6**
Total	**24901**	**593**	**100**

Table 28 gives some indication of the scope for cost reductions. If the basic model of a three-month initial block and a month final block separated by school-based practice is retained then cost reductions will have to be found from within the major categories identified. Field support costs could be reduced by sharing costs for zonal meetings and PEA visits. It might be possible to reduce these by as much as 75%. As noted above, school visiting by College lectures cannot take place at the frequency planned if all cohorts are enrolled simultaneously. There is evidence that far less than one visit per student has actually been achieved, and that such school visits have not been regarded as contributing much to the training process (Kunje and Chilembo, 2000). If this visiting was eliminated in favour of school- and PEA-based assessment covered under other budgets, these costs would disappear. Changing the length of the school-based period would not have an effect on costs independent of the number of activities planned. It is more difficult to see how the full-time training costs could be reduced without reducing the time in College. Cost recovery has been suggested related to boarding costs (Government of Malawi, January 2000). If this were set at about MK5 per day it would reduce the boarding costs by about MK600. Materials costs are fairly fixed and could not be seriously reduced without degrading the resources available to students. The costs of assessment could be reduced but this would not have much effect on the overall budget. It is probably preferable to re-profile expenditure on assessment to produce more valid instruments of higher quality (Croft, Kunje and Stuart, 2000). If these modifications were made the cost per MIITEP trainee over two years would fall from MK24,900 (US$593) to about MK 15,540 (US$370).

These figures can be compared with the most recent unit costs for teacher training institutions as a whole (including secondary) based on MOE budget estimates. These are MK5,200 (1996/7 MOE statistics 1998), or about MK6,900 (US$163) (budget estimate 98/99). Recurrent unit costs of MIITEP training therefore appear to be about three times the current government unit cost of the teacher training institutions. By way of further comparison project estimates for full-time residential training secondary teachers at Domasi and Chancellor College are currently placed in the range of MK45,000 per year (US$ 1100) (Secondary Education Development Plan, Ministry of Education, 1996:63).

In summary, what can be said about costs is that MIITEP style training would cost around MK62.3 million for a cohort of 2,500 over two years if it continued to be implemented as originally intended without further development costs. This figure could be reduced to around MK38.5 million if the fieldwork costs were reduced and a boarding fee introduced. With six cohorts enrolled simultaneously (15,000 trainees) the total cost of training would be between MK 374 million and MK 231 million (including salary costs borne by the Ministry). The current annual allocation to teacher education for all the training colleges including secondary is about MK 40 million. To maintain MIITEP therefore requires substantial external assistance. We note that currently infrastructure and staffing is not sufficient to maintain six cohorts simultaneously. If this were envisaged there are additional investment costs over and above those needed to support the recurrent budget.

It is important to remember that the existing method of training teachers incorporates five terms paid work as an untrained teacher during the training period. Conventional full-time residential PRESET does not have this complementary benefit. The opportunity cost of this

system is therefore much lower than that of conventional full-time training. If MIITEP were not in existence and was replaced by full-time training, additional untrained teachers would have to be employed and paid to maintain the same levels of the pupil-teacher ratio. Simply speaking the opportunity cost of a two-year full-time programme is that of the gross salary of a primary teacher for two years – say MK 50,000. MIITEP's opportunity cost is only 4 months salary – about MK8,000. This represents a substantial saving for the education budget as a whole of about MK630 million (US$15 million) over the four years covered by 6 cohorts of MIITEP (or MK158 million per year).

Alternative patterns of organisation for teacher education are being considered as a result of dissatisfaction with some aspects of MIITEP training. An illustration can be provided of the most commonly discussed alternatives. The training model could return to a pattern of one year full-time and one year school-based, or two years full-time with teaching practice integrated into the programmes. The full-time cost per trainee in Colleges of Education can be estimated at about MK 25,200 based on existing cost structures. Table 29 estimates costs for a conventional two-year full-time programme with 16 weeks of College supervised teaching practice, and for a one-year full-time course followed by one year of supported school-based teaching practice.

Table 29: Comparison between Different Modes of Training

Mode						
	College cost	**Field cost**	**Teacher Replace-ment**	**Full unit cost**	**Annual Output**	**Total cost for 7500**
	MK	MK	MK	MK		MK '000
MIITEP without cost reduction	14700	10080	8400	33180	7500	248.9
MIITEP with cost reduction	14280	1260	8400	23940	7500	179.6
Two year full-time - 16 weeks teaching practice	50400	8400	50400	109200	2500	819.0
1 yr FT + 1 yr in school - without cost reduction	25200	4200	25200	54600	2500	409.5
1 yr FT + 1 yr in school - with cost reduction	23940	504	25200	49644	2500	372.3

Table 29 shows that two years of full-time training is between three and four and a half times as expensive as MIITEP per student. One year full-time followed by school-based training is between two and three times as expensive. The estimates include the cost of teacher replacement. In addition MIITEP is capable of producing three times the output of either one of the other options in the same time period, without the need for additional facilities. In order to increase output from 2,500 to 7,500 an additional 5,000 places would have to be created in the College system through building new TTCs, or through utilising space in other educational institutions. The alternatives modes are therefore substantially more expensive and would probably require significant capital investment. They would also require the appointment of a considerable number of new College lecturers.

9. POSTSCRIPT ON RECENT DEVELOPMENTS

The baseline analysis for this study was undertaken in the first quarter of 1999. Since then a number of developments have taken place. Three sets of development invite comment.

First, the projections of teacher training demand remain valid. No subsequent enrolment or teacher employment statistics are available which would change the conclusions reached, except in the direction of increased demand. The annual capacity of MIITEP (7,500) is on the lower margin of what would be needed to meet PIF targets. Since no new MIITEP trainees have been enrolled for 15 months the backlog of untrained teachers has remained, as it was when the estimates were made. Currently it is planned to recruit up to 10,000 additional untrained teachers. It is not clear how these will be trained. The immediate consequence of this and the delay in enrolling cohort 7 will be to increase the proportion of untrained teachers in the primary system. Moreover the effects of HIV on attrition amongst trainees and teachers have yet to peak. Attrition rates may therefore increase further. This implies that in any method of training teachers for the future must be capable of producing similar or greater levels of output as can the MIITEP system unless PIF targets are to be radically revised.

Second, several developments related to MIITEP need summarising. These are:

- The completion of cohorts 1, 2,and 3. Cohort 1 final examination results have been published. Cohorts 2 and 3 are awaiting results. MIITEP trainees have yet to be certified and placed on the salary scales of trained teachers. Cohort 7 has been selected but to date (March 2000) residential training has not commenced pending decisions on the future of MIITEP. It consists of a majority of JC holders who were not called for previous MIITEP cohorts.

- College staff are occupied in completing programmes for cohorts 4,5,and 6. This has lightened their workload since no new MIITEP students have entered the Colleges for 15 months. There will be no output from MIITEP after cohort 6 completes at the end of 2000 for at least 15 months until the middle of 2002.

- Zonal seminars and PEA visiting to MIITEP trainees has been curtailed by lack of funds. It appears that a funding gap has developed consequent to the completion of cohorts 1, 2 and 3, which have absorbed more of the finance available than originally intended. Current estimates suggest that the shortfall may be between MK12 and MK20 million for the completion of cohorts 4,5 and 6. Discussions are taking place with donors to meet this shortfall. No funding has been agreed for cohort 7.

Third, a revised PIF has been produced (Government of Malawi, January 2000). This includes new sections which relate to teacher education and indicate policy shifts of relevance to this study. The most important of these include:

- Teacher Education and Development will be regarded as a priority area and funding will be increased from 3% to 4% of the recurrent education budget.

- The percentage of unqualified primary teachers will be reduced from 50% in 1997 to 30% in 2002 and 10% by 2012

- A Teacher Education Directorate will be introduced in the Ministry to be headed by a Director level appointment

- A national strategic plan for teacher development will be produced in 2000.

- National standards will be developed for all training institutions

- MIITEP style of teacher education will continue as long as the need is justified

- Cost sharing measures will be considered for teacher education

- The government will promote the participation of the private sector in teacher education.

- TTCs will be rehabilitated and maintained and staff development programmes introduced to upgrade competencies

- The establishment of more TTCs will be considered, especially in those divisions currently without a TTC.

- The mode of teaching practice will be revised to increase its effectiveness

- Measures will be taken to promote gender balance in teacher training and appointment

- Training will be provided for teachers working with pupils with learning difficulties and other special needs.

These commitments in the most recent PIF are an indication of the importance that is now attached to this activity. They are generally consistent with analysis in this report and the conclusions summarised below.

10. CONCLUSIONS

Primary teacher education in Malawi is in crisis. The MIITEP system of training adopted since 1997 has succeeded in completing the training of three cohorts of untrained teachers. Three cohorts are in the training system but the completion of their programme is hampered by lack of agreement about continued funding. Cohort 4 is currently enrolled for its final residential period. A seventh cohort has yet to be enrolled. A direct consequence is that the pupil per qualified teacher ratio will rise from its already very high levels to exceed 80:1. This will jeopardise the achievement of the Free Primary Education policy.

The recent commitment to give priority to teacher education through the establishment of a Directorate, a phased increase in budgetary allocation, and new investment in the Training Colleges and their staffing is to be welcomed. It is accompanied by a review by the Ministry and donor partners intended to shape developments in teacher education. This analysis draws attention to a range of issues. These include the following.

First, analysis of primary teacher supply and demand leads to a clear conclusion that only a method of delivery capable of yielding in excess of 7,500 teachers per year will come close to servicing the targets identified in the PIF which are consistent with those generated by our own projections. Current primary TTC capacity is of the order of 2,500 students. Under the MIITEP system, with three-month residential blocks, three cohorts can be accommodated each year. Other modes of training including longer residential periods could only reach these levels of output if several additional TTCs are constructed and staffed. They would have substantially higher recurrent costs than MIITEP.

Second, the number of staff in the primary teacher training colleges is dwindling. It is currently thought to be about 150[14] across 6 colleges. About half are within a five years of retirement, many are under-qualified, and morale is disturbingly low. Currently there appear to be no plans to renew the cadre systematically. Within two years it seems probable that staffing in the TTCs will fall below the levels that would be necessary to service MIITEP or any successor programme.

Third, teacher training college infrastructure has been degraded by persistent under-funding and irregular release of the recurrent non-salary budget. Maintenance has not occurred (to the point where a TTC has been closed for lack of working sanitary facilities). Learning materials aside from MIITEP handbooks are often absent or out of date, and other kinds of equipment often broken or not available.

Fourth, school-based supervision and support for MIITEP trainees is expensive. The research evidence from MUSTER suggests that it is not consistently arranged, coverage is poor, and the value it adds to the training of students is debatable. The exception is that zonal workshops are generally well received and thought useful.

[14] TDU estimate March 2000

Fifth, teacher education curriculum material has a range of strengths and weaknesses. Learning and teaching in the Colleges varies widely in quality and consistency with MIITEP goals. Co-ordinated curriculum management and trainee-centred learning activities are not prevalent and articulation between the College-based programme and subsequent field-based support appears weak.

Sixth, analysis of the assessment strategy and final examination papers leads to some cause for concern that what is tested may not reach desirable levels of validity and reliability. It is important that MIITEP desired outcomes are reflected in assessment related to certification.

It is not the purpose of this report to lead to detailed proposals for the future of MIITEP, or its successor. That is a task for the MOESC and its donor partners. Nevertheless, it is important to outline some key conclusions that arise from this analysis of costs and finance and other parts of the MUSTER research programme. These we argue should be considered when the regeneration of the teacher education system is considered. The establishment of a Teacher Education Directorate tasked with the development and implementation of policy creates the opportunity to bring coherence, medium term stability, and real quality to a much neglected but crucial component of the education system.

Our analysis identifies several critical areas where new policy related to primary teacher education is needed. To be meaningful decisions on policy cannot be separated from programmed activities and their associated resource requirements. Three issues stand out.

First, a decision on the continuation of MIITEP or its successor can no longer wait without cumulative damage to the quality of primary schooling and a deterioration in performance against most if not all the relevant PIF indicators. Teacher training has effectively been suspended as demand grows.

Second, methods of training substantially different to MIITEP have yet to emerge which can satisfy what appear to be the fundamental requirements. These are the capacity to produce 7,000 or more teachers a year, unit costs no higher than MIITEP costs, and sufficient continuity with existing methods to allow quality improvement. The last point is important. A radical shift to alternative methods of training would require extensive reorientation of all those involved and would negate the investment to date in support infrastructure for teacher education. Substantial change would need several years to develop new materials and retrain staff at all levels. We note that lengthened periods of in-College training unambiguously imply higher unit costs, lower output, and substantial transitional demands during a change over period. It may be better to persist with an improved version of the existing programme than to seek an as yet unidentified alternative.

Third, the research indicates that MIITEP, or its successor, could be reinvigorated and modified in ways which could reduce costs, maintain output, and encourage focus on achievable goals that would improve quality. In brief a strategy to achieve this would address the following issues systematically as an integrated set of concerns in several arenas.

Arena 1. - Policy

A consistent medium term plan for teacher education does not exist. The training system cannot be developed in a sustainable way without clear commitments over time which allow enrolment planning, accumulation of expertise, the development of efficient and effective institutional infrastructure, and systematic quality improvement.

A consensus is needed that the nature of the demand for primary teacher training precludes some options that might otherwise be desirable. The choice is simple and should be made. It is 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.

The arrangements for the co-financing primary teacher education between the MOESC and its partners need agreement. Predictable flows of external assistance are needed over an appropriate period. Without these it is unlikely that PIF targets are feasible. It may also be that the gains of the past will be eroded.

Policy on funding and accountability should be revisited. Current practice in funding the operational expenditure of the TTCs creates bottlenecks in the flow of funds and unrealistic allocations for learning and teaching infrastructure. It absorbs wholly disproportionate amounts of senior management time. It is unclear why more simplified and predictable arrangements cannot be put in place for the small number of TTCs. We understand grant-aided schools self-manage audited budgets that do not suffer the same inefficiencies and irregular flow of funds. Similar arrangements might be considered for the TTCs.

Arena 2 - Colleges

Decisions on the future of the TTCs. A window of opportunity exists to renew the cadre of teacher educators, rehabilitate buildings and infrastructure, and generate developmental TTCs that could have a real impact on the quality of learning and teaching.

Without a substantial programme to identify, train and appoint a new generation of College lecturers, the primary TTCs capacity will degrade rapidly as a result of attrition amongst existing faculty. Addressing this need is of the highest priority since any such programme may take several years to come to fruition if it is to be of quality. It might well be accompanied by targeted staff development for existing faculty far enough from retirement for investment in new skills to be worthwhile.

Part of any regeneration of the cadre of primary College lecturers should recognise the need to attract and retain high quality staff. Current salary levels do not seem sufficient for this purpose. If it is intended to up-grade the education level of lecturers to graduate status and to re-profile lecturers' jobs towards a more

demanding set of professional responsibilities then greater incentives and rewards will have to be considered.

The learning environment in the TTCs is generally inadequate to support quality teacher education. It also demoralises staff and trainees. Needs differ but with imaginable amounts of investment in rehabilitation, extension of facilities, and appropriate re-equipment, a transformation is possible.

Further, the TTCs could be staffed and resourced to be regionally located centres for professional development as well as initial training. They could complement TDCs and other facilities in a way that is not currently possible. They could take on developmental responsibilities with others (e.g. PEAs) to improve access, retention and quality in clusters of schools associated with the TTCs. This could generate new synergies and closer links between TTC staff and the realities of the schools for which they are preparing trainees.

Strategic support to revitalise College management and re-orientate it towards effective learning and teaching is critical. Without stable and purposeful leadership directed towards clear goals institutional development will be unpredictable and sporadic. We understand turnover of College principals is high, new appointments have no initial or subsequent management training, and external sources of advice and support are unclear. No TTC appears to have a strategic plan, which would create direction and focus energy towards agreed goals. TTCs will only establish themselves as centres of excellence if senior management teams have the skills and commitment to make this a reality.

Arena 3 Curriculum Issues

College curricula are established and materials have been developed. In the short term there would seem no realistic alternative but to continue using the MIITEP handbooks, which are the main resource. If there is some assurance of their use beyond cohort 7 it becomes attractive to address areas of weakness or omission in the curriculum and support enrichment e.g. language and study skills, mathematics (see Stuart and Kunje, 2000). Full-scale revision of the handbooks would not seem purposeful unless or until a convincing case is made which would justify the costs and identify the benefits.

The current system of field support is over-ambitious and demonstrably ineffective. In particular College visiting of trainees in school often does not occur and when it does can be fragmented and incomplete and focused solely on assessment. The main reasons for this are structural. The logistics preclude frequent visiting with a developmental purpose. PEA visiting is characteristically accomplished in the context of whole school development visits. These realities lead to the suggestion that these field support activities are reconsidered and integrated into the normal work of PEAs. This can and should be complemented by support from

Headteachers who have a responsibility for managing, developing, and appraising all their staff. Modifying the arrangements as suggested would release TTC staff to concentrate on College-based quality improvement, development activity focused on the area local to the TTC, and would increase efficiency and reduce costs by eliminating duplication. TTC staff might also play a role in training and professional support for PEAs.

The load created by the assessment strategy adopted is substantial. It is not clearly justified by the contribution it makes to effective professional development, or the selection of those unsuited to teaching. Final examinations are expensive. It is important that they are reliable and valid indicators of learning. Modest investments in quality improvement in this area should pay dividends.

In conclusion, the analysis reported in this paper does identify exciting possibilities for ways forward that would transform what is a deteriorating situation in primary teacher education. The MUSTER studies indicate both the strengths and weaknesses of the current system. What has been achieved should not be undervalued, nor should the difficulty of the task ahead be under-estimated. The TTC system is small, but it can be transformed with vision and insight. This is critical to the main planks of MOESC policy on primary education development.

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