



SCALING UP HEALTH AND EDUCATION WORKERS: SYSTEMS FOR TRAINING

LITERATURE REVIEW

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Table of Contents

TABLE OF CONTENTS	3
ACRONYMS.....	1
EXECUTIVE SUMMARY	2
INTRODUCTION	4
1. CLASSIFICATION OF TRAINING TYPES/INSTITUTIONS IN HEALTH AND EDUCATION.....	6
2. REGULATION OF TRAINING INSTITUTES	10
3. EMPLOYABILITY OF SKILLED/QUALIFIED WORKERS.....	12
4. DEMAND FOR TRAINING PLACES	14
5. LABOUR MARKETS IN HEALTH AND EDUCATION	16
6. PUBLIC OR PRIVATE TRAINING PROVISION?.....	19
7. CONCLUSIONS.....	20
BIBLIOGRAPHY	22
ANNEX 1 TERMS OF REFERENCE.....	25

ACRONYMS

EFA	Education for All
GDP	Gross Domestic Product
HTI	Health Training Institution
MDG	Millennium Development Goals
MOE	Ministry of Education
NQT	Newly Qualified Teacher
TTC	Teacher Training College
TTI	Teacher Training Institute
UNESCO	United Nations Educational, Scientific and Cultural Organisation
WHO	World Health Organisation

EXECUTIVE SUMMARY

This literature review has been commissioned by DFID Scaling Up Services Team and is to inform future policy and programme decisions on scaling up training for health and education workers. Despite significant early investments in training systems for an appropriately skilled workforce in health and education, there continues to be a growing imbalance between the output of trained personnel and demands for a skilled workforce in many low income countries, especially Africa and parts of Asia.

The review is structured around five independent hypotheses (see Annex 1) relating to the operation of the labour market, types of training, control of training, and public/private mix in training. The review was conducted using electronic and manual searches of both grey and published international literature, but was limited in scope and should not be considered systematic or comprehensive.

Training of health and education workers can be either pre-service or in-service. Pre-service training occurs mainly in a range of actual training institutions. Average training period for initial teacher training is two years (Africa), with highly homogenous student populations. Data analysis for health training is much less precise but a similar profile can be assumed. In-service training on the other hand is more likely to be short-term, work-based and involving virtual training organisations. Trainee populations are less homogenous and more open learning approaches are likely to be employed. Wastage from both kinds of training and in both sectors can be high although reliable estimates are elusive. Recurrent costs of training institutes indicate high levels of inefficiency, relatively low productivity, and limited use of technology or innovation. Strategic development of training infrastructure and technologies appears static.

Governments in developing countries appear to retain a high degree of control over all aspects of training up the skilled workforce. Centrally controlled enrolment targets for training appear unrealistic and are reactive rather than proactive. Training through private sector initiatives remains poorly defined and limited in scope and its overall market share cannot be well estimated. Not-for-profit (including faith-based) provision is significant in several countries of Africa, and is suggestive of the strong potential for private provision of training. Government failure to meet strategic development goals is attributed to consistently poor stewardship, an inability to maintain adequate resource flows, and outdated legislation. A few countries are attempting, with some success, to change the government role in training to be only normative and regulatory, and while this transition is largely successful it is also slow.

Demand for skilled labour for both health and education continues to outstrip supply. Despite this excess demand, normal labour market conditions do not apply in health or education, and training systems are largely unresponsive to fluctuations in demand. Numbers in training tend to be determined by historical precedent, sometimes with a growth factor built in, or based on centrally generated targets. Wastage of skilled personnel from both sectors is variable and in many cases too high for system tolerance. There is evidence that personnel movements within the sector tend to be from public to private employers, and incentives to reverse this shift are weak. SWAps for health and education would help reduce this problem.

External assistance to most countries actively supports in-service training to a significant degree, but this is not generally considered sustainable or continued beyond the short-term. The literature suggests that any scaling up of priority

interventions is likely to require significant investments in both initial and continuous training.

INTRODUCTION

This literature review has been commissioned by DFID and provides a short summary on some specified features of the training systems which are in place in developing countries (mainly low income Africa and Asia) which supply key workers into the health and education sectors. This is a short and rapid review of the literature and reflects mainly material published in the academic and international literature or available through electronic international development data and research networks. The search strategy for a task of this nature had to be both internet-based and supported by manual search and retrieval from specialised resource centres at IHSD, London and the Centre for Health Planning and Management, Keele University. Key electronic sites/search engines included ELDIS, ID21, UNESCO, IDS/BLDS, WHO. Terms of Reference for this review are attached at Annex 1 and it should be noted that it is not intended to be a systematic review of the literature.

The review focuses on the following key aspects of training systems:

- What types of training predominate to prepare a skilled workforce?
- Who normally regulates workforce training in country?
- Who employs the skilled workforce after training?
- What is the contribution and impact of private training provision, if any?
- Do labour market forces influence training provision?
- Is there sufficient evidence to continue/scale up support to public sector training?

Due to resource constraints, a comprehensive analysis of data was not feasible and the review attempts to synthesize conclusions and recommendations from a wide range of published qualitative and quantitative data. Validation of sources was not attempted. An assumption was made that the conclusions of the review should serve to inform decisions on scaling up external assistance to different/successful approaches to workforce training for both health and education sectors. This review combines data and discussion for both sectors treating the training system issues as sufficiently common and integrative, although this is a strategic assumption which may not hold true in certain/many specific country contexts. The search was severely time limited and is more complete in some aspects than in others. It makes no claim to being systematic or comprehensive.

Interest in the efficiency and effectiveness of systems of training arises from widespread concerns that current production levels are failing to keep pace with qualitative and quantitative requirements for a skilled workforce. For example, 1995 data on the qualifications of primary school teachers in various countries reveals huge variations in the use of skilled workers. In Uganda 50% of full time primary teachers had no professional training, but Tanzania in contrast had 0% without training. Bangladesh had 18% untrained had Nepal had 3% untrained. (Schleicher, in Peasegood, 1997).

Investment in basic and pre-service training for both sectors varies widely both historically and politically, but early capital investments in training systems have clearly been unable to meet sector capacity requirements for a skilled workforce today. Moreover, several authors warn against expecting (re-engineered) training systems alone to meet changing sector requirements (Beaglehole, 2003; Egger & Adams, 1999; Woodward, 2000). Much of the current literature on workforce planning would indicate that failed recruitment and retention policies, plus rising HIV/AIDS prevalence, now contribute significantly to the continuing skilled workforce gap.

Upgrading of skills through continuing education of the workforce is common in most training systems, and support through in-service training has been a continuing focus for external assistance in both sectors. Unfortunately, despite the importance of this topic, several authors have commented on the problem of obtaining substantive evidence to support policy initiatives directed towards the scaling up of training of a skilled workforce (Beaglehole et al, 2003). Despite the weak policy evidence, there is general and widespread support for scaling up investments in both initial and continuous training (Wyss, 2004) for both education and health in order to achieve the Millennium Development Goals and strategic sector plans.

1. CLASSIFICATION OF TRAINING TYPES/INSTITUTIONS IN HEALTH AND EDUCATION

One established way of classifying systems of training uses several different input areas along one major 'flexibility' continuum. Key inputs of interest in this review are (1) trainees (who); (2) content of training (what); (3) teaching/learning approach (how).¹ The suggested continuum extends from 'closed' training systems to 'open' systems and permits the review to acquire a framework for analysis. It is acknowledged that this framework has some theoretical and practical limitations but has the advantage of being sensitive to the wide range of training used to develop a skilled workforce. The overall picture in developing countries is one of heterogeneity rather than homogeneity, although no general inventory on teacher/health training institutes is readily available (UNESCO, 2001; UNESCO, 2005). In a recent review of teacher training in Sub-Saharan Africa (UNESCO, 2003) it becomes clear that no one pattern for teacher training predominates either within a country, or within the region. Stated simply the skilled workforce is trained differently within any one country.

Closed Systems

Closed systems of training tend to have homogenous sets of trainees, with controlled access to training opportunities through selection and standards for qualification, trainees following the same curriculum as previous or successive cohorts, and with little or no flexibility in how trainees can learn or the pace of learning. Most teacher training in developing countries seems to operate as closed training systems, although there is limited evidence to substantiate this conclusion. There appear to be three main types of institutions set up to conduct the training of teachers - institutes, colleges and universities. These different types of institutions use different entry criteria, deliver different programmes and offer different levels of qualifications but do this consistently between institutions. A school leaver wishing to train as a primary school teacher would have to satisfy similar entry criteria and follow similar curricula/programmes at whichever institute. In the education sector, these pre-service programmes normally prepare teachers to teach in different types of schools, ones which reflect the existing schools system of that country. These have been summarised in Table 1 and are based on data from UNESCO (UNESCO, 2003) surveys of teacher training.

Table 1. Institutional framework for teacher training

Teacher Training Institutes	Certificate level programmes	Primary school teachers
Teacher Training Colleges	Diploma level programmes	Middle school teachers Junior school teachers
University faculties of education	Degree level programmes	High school teachers College teachers

Trends in the organisation of pre-service training of teachers over time reflect the effects of economic growth, an expanding national labour market and globalisation. Most developing countries, by the 1990's, required completion of secondary school plus some years of post-secondary teacher training for teachers to qualify as certified teachers. Length of teacher training varies between countries. In Sub-Saharan Africa 1 – 4 years is the normal time to train a teacher, but the average (mode) seems to be

¹ Adapted from Lewis & Spencer (1986) *What is Open Learning?*, Council for Educational Technology, London

2 years (UNESCO, 2003). In some African countries (Madagascar, Malawi) primary teachers have only 2 years secondary education before direct entry into teacher training (Bennell, 2004). Sierra Leone had 6 government teacher training colleges (TTCs) offering three types of courses from certificate courses through to 4 year degree courses (Bennell, 2004). Ghana, in 1998, had 38 teacher training institutes (TTIs) with a staff strength of 1044 and an annual intake around 8000 students (Avotri, 1999). Some TTIs in developing countries appear to be remarkably inefficient with high staff to student ratios and exorbitant residential costs. However, there are several instances of countries attempting to rationalise the production of a skilled (education) workforce by closing down smaller less efficient training institutes to achieve significant economies of scale. South Africa has achieved a ten-fold reduction in the total number of TTIs from 281 to 25 with huge overall cost savings (Bennell, 2004; Rose, 1997; Santiago, 2002).

Table 2. Summary of models of teacher training in developing countries.

Model	Duration	Entry	Curriculum	Unit cost
Model 1 college certificate or diploma	1 – 4 years full time residential	Secondary school leavers with or without experience	School subject Professional studies Block practice & internships	High
Model 2 Postgraduate certificate of education	1-2 years after first degree	University degree; no experience	Subject methods; Professional studies; block practice	High but for a shorter time
Model 3 In-service training of untrained teachers based in schools	1-5 years part- time; maybe (residential) workshops	Junior or secondary school leavers with experience as untrained teacher	Subject upgrading, professional studies; Practice in school during normal employment	Variable dependent on intensity of contact with tutors and residential Requirement
Model 4 Direct entry	0-4 years probation	Senior secondary leavers; graduates	Supervised induction; experience gained in course of employment	Low

(adapted from EFA 2005, p 162, UNESCO, 2005)

In the health sector, the training of skilled workforce seems to be even more complex. There is no readily available inventory of different models of health worker training, partly because the country scenarios are hugely complex and involve many different types of health workers. In a useful discussion on health worker training, Woodward reminds us that the education of health care personnel usually occurs within a complex educational system mandated by legislation which often regulates the broad functions and processes of these institutions (Woodward, 2000). This reinforces the notion that there are strict limits to the autonomy of health training institutions (HTIs) as to the intake of trainees, the content of the curriculum and the teaching/learning approaches used. Due to high levels of fixed costs of these kinds of training institutions, there is also a drive towards rationalisation of the means of

production in the health sector, and a plea not to open new training institutes (Martinez, 2002). Health training tends towards 'closed' training systems. The picture can be summarised however in Table 3.

Table 3. Institutional framework for health training

Health Training Institutes	Certificate level programmes	Community health workers Auxiliary health workers
Health Colleges	Diploma level programmes	Health professionals
University faculties of medicine/health sciences	Degree level programmes	Doctors, pharmacists ' nurses, midwives

Despite remarkable parallels between the two sectors in the above institutional frameworks, it is not possible to find documented instances where teachers and health workers are educated in the same institutions.

Mixed provision

A mixed training system has some features of both 'open' and 'closed' training systems. Both the education and health sectors have more flexible provision for in-service training often in difficult/transitional development conditions. Training is offered, often in a programme based, non-institutionalised setting, for upgrading and/or offering new knowledge and skills to existing practitioners. Access to training under these conditions is more open and less restrictive and the intake of trainees is often less homogenous. This training system can be viewed as a 'partially open' or 'mixed' system of training. This kind of training, for both sectors, is viewed as a short term solution, is often unaccredited, and often is non-formal. Regular training institutions are not always used for this kind of training. (Storms, 1982; WCRWC, 2004; Egger, 2000; UNESCO, 2003). Aiga and Banta (Aiga, 2003) argue that in-service training systems in the health sector serve different purposes in developed and developing countries. They suggest, without strong evidence however, that the uptake of in-service training opportunities in developed countries is as a result of professional pressure for accreditation. In developing countries, the 'pull' factor is a stronger driver of motivation, and training uptake happens as a result of strong direct financial incentives.

Open system

Truly open systems of training have no restrictions on access to training, will have sufficient flexibility to permit trainees to tailor the content of their training programmes to their own needs, and offer trainees individual learning pathways and media for learning, unique to each trainee. We rarely see such open systems of training in either education or health, but there are an increasing range of open learning opportunities now available, especially in the education sector. The Commonwealth of Learning (COL, 2005) has been instrumental in developing access to open and distance learning for teachers and teacher educators. Duggan (Duggan, 1996) has remarked that recently external assistance to pre-service teacher training and teacher education had slowed, but the substantial efforts of COL is showing promising results using open and distance education. COL has a number of teacher training initiatives, including upgrading teachers using distance learning in Botswana, Malawi, Mozambique, Namibia, South Africa, Tanzania, Zambia and Zimbabwe. NEPAD also offers a wide range of teacher training courses using open learning although it is not clear how many teachers use these opportunities.

Dladla and Moon (2002) suggest that the institutions of teacher education created in the twentieth century will be unable to cope with the scale and urgency of demand required in the twenty-first century and must therefore change both their purpose and their function. They argue strongly for school based training for all teachers using supported open learning programmes which use new interactive technologies.

2. REGULATION OF TRAINING INSTITUTES

Who regulates or controls the training? The initial assumption hypothesised by DFID, that the main regulator of production is the government, seems to be borne out in the literature, and there is clear evidence that most governments in developing countries retain control over teacher training and health worker training. This is despite it being recognised that it is often unable to keep up (Tembon, 1997; Zurn, 2002). For example, a few years ago in Nicaragua, state schools were the only ones entitled to educate health personnel (Nigenda, 2000).

Governments appear to regulate with a wide range of instruments. One instrument is the financial control of training institutes. In some of the literature reviewed, the burden of paying for training the skilled workforce is clearly on the government (Huff-Rousselle, 1993; Woodward, 2000; UNESCO, 2003). The Abuja document (MDG, 2004) suggests that government funding for pre-service training has been stagnant or falling over the last two decades and that this directly contributes to the anticipated failure to achieve Millennium Development Goals (MDGs) in Africa. The training of a skilled workforce has been seen merely as recurrent expenditure in-country rather than in terms of long-term capital investment.

Governments retain their grip on regulation despite the fact it has been long suggested that the regulatory framework for human resources is often inadequate (Dussault, 1999). The government is often dealing with outdated legislation for skilled personnel, has no enforcement powers, and with fragmentation of the regulation process between jurisdictions. In the health sector, where there is a tendency to retain centralised HR functions, government departments ensure that educational facilities develop the types of health care personnel required to meet human resource needs for national/regional health. Ministries frequently set enrolment targets. Many countries cite problems with duplication of functions across government departments (Dussault, 1999; Woodward, 2000; UNESCO, 2003). In Nicaragua, through decentralisation and sector reform, the state now has a subsidiary role in production of health services and aims to strengthen its role as regulator (Nigenda, 2000).

Legislation is used to establish accreditation requirements and most governments retain responsibility for the quality of basic education for the skilled workforce. In order to meet government mandates, mechanisms have been developed to gain control over the standards, length and content of training. Ministries usually set the educational requirements for various types of workers such as location of training and curriculum content (Woodward, 2000). Accreditation standards initially focused on infrastructure (resource, book stocks etc) but now focus on process and on learner outcomes (Woodward, 2000).

Evidence in the literature about private training institutions and their degree of autonomy is exceptionally limited. It could therefore be stated with some confidence that in most developing countries, private institutions are the exception rather than the rule. In Nicaragua, where there is an explicit policy to relax government control, there is only one private medical school to date, but it is one which is highly successful (Nigenda, 2000). Data is also weak on private teacher training institutes. In Liberia, one out of three TTIs was private (Santiago, 2002).

Bennell (Bennell, 1998) conducted an interesting survey of private sector provision of vocational training in Zimbabwe. In Zimbabwe, a high proportion of vocational training is conducted by the private sector. He notes that the government capacity to regulate the private institutes was severely constrained and that the sector should

either self-regulate or should develop their own regulating agency under government mandate. He recommends regular inspections (every 3-4 years). He also notes that private institutions were most successful in urban areas, and tended to go out of business in rural areas.

3. EMPLOYABILITY OF SKILLED/QUALIFIED WORKERS

It is of interest to know more about the eventual destination of graduates from training institutions. The hypothesis in the terms of reference focuses on the assumption that prevailing conditions of undersupply (or presumably any workforce imbalance) in the public sector arises as a direct result of state control over the means of production for skilled workers. This complex and multiple hypotheses is not possible to demonstrate at this point in time, so the review will instead examine the evidence demonstrating employability and actual wastage of the skilled workforce following training. In fact it is difficult to discern any correlation between the source of training and wastage.

Qualified teachers in most developing countries are generally defined as those possessing appropriate government credentials, such as completion of secondary education plus a teacher training certificate (Avotri, 1999; Peasgood, 1997; Rose, 1997). Despite rules on qualifications, many unqualified workers are employed. In many refugee-producing countries, or countries with large displaced populations, there is a shortage of qualified teachers and in Liberia, which is representative of severe local difficulties, 65% of primary school teachers are unqualified (WCRWC, 2004). The Ministry of Education (MOE) in Burma estimates 57% of primary school teachers and 9% secondary teachers have never received any training (Lwin, 2000).

Martinez and Martineau (2002) have identified a 'lack of fit' in the health sector between the entry qualifications for a post and the training output from training institutions (Martinez, 2002). According to Martinez et al, health training institutions may be seriously under-utilised due to change in demand for specific skills, although there is little empirical evidence to support this interesting conclusion. Martinez also suggests that in the health sector, as in education, a recognisable proportion of staff are appointed to posts without relevant qualifications.

Wastage during training can be a serious problem in both teacher training and health training institutions although it is impossible to discern a clear pattern. There is evidence that losses from medical schools in Ghana are around 30%, and in midwifery schools in Malawi it is close to 40% (Martinez, 2002). In Ethiopia wastage from medical schools is around 30%, compared to 1.1% in the USA (Zurn, 2002).

Attrition rates (losses not due to natural wastage such as retirement or death) also vary around the world and no discernable pattern can be identified. In Cambodia, 80% of teaching graduates from one private university do not take up teaching posts but work in the commercial sector (Santiago, 2002). In Nigeria 80% of teachers were still teaching five years after graduation (in the UK 40% of newly qualified teachers (NQT) have left the profession within 5 years), and Tanzania has similar rates of retention (Peasgood, 1997). In Burma more than 25% qualified teachers sent to remote areas to teach in government schools fail to complete the first year of their contract (Lwin, 2000) and return to urban areas but are lost to the system. In Nepal, one study shows annual attrition rates less than 2% in the health sector (Egger, 2000) and low turnover rates at primary schools of 3.4%.

There are no definitive figures for recruitment into private services following publicly funded training, although the Abuja document suggests this is significant. Losses to other sectors, including private for-profit health sector, run between 15-40% per annum according to estimates from Ghana, Zambia, Zimbabwe, Tanzania, Malawi, and Mozambique (MDG meeting report, 2004). The literature suggests that 'pull' factors and 'push' factors are more significant in influencing the eventual employment of skilled workforce.

The private sector offers increasing job opportunities to health personnel and acts as a 'pull' factor. The private sector generally provides higher salaries and more training opportunities, with health institutions competing under unequal conditions for the recruitment of new graduates (Boonyoen, 1997). 'Push' factors operate by deterring skilled workers from joining the public sector part of the labour market. Recruitment processes are lengthy, bureaucratic and costly, and public sector employers need to reduce delays between graduation and recruitment (MDG, 2004).

The combination of push and pull factors makes the private sector employer much more attractive and private sector jobs more accessible. If public training institutes are indeed designed to supply public services, then attempts are needed to reverse flow from public to private and recruit privates to work in public sector through agencies, part-time appointments for private practitioners (Wyss, 2004) and turn 'push' factors into 'pull' factors (Boonyoen, 1997; MDG, 2004).

In most developing countries there appear to be high rates of transfers of teachers between schools, rather than attrition from the profession. Actual levels are difficult to predict as most countries show variation from year to year, and the picture is not consistent regionally. For instance in Malawi, 25% of primary teachers left rural schools within the year (Bennell, 1998). Nepal shows only low (3.4%) turnover rates of primary school teachers, with Botswana and Zambia around 2%. Tanzania adopted an innovative scheme of upgrading the qualifications of primary teachers, but only 50% of primary teachers returned to teaching (Bennell, 1998). There is no data on the effectiveness of bonding schemes (Bennell, 1998) in influencing retention. Rates for leaving into private schools are not available. Non-government schools tend to recruit and retain teachers from their own short teacher training programmes (e.g. Burma) (WCRWC, 2004). These findings call into question the efficacy of offering skilled workers upgrading training.

Lewin (2002) in a major study of teacher education policy and practice in low income countries has demonstrated a growing imbalance between the output of trained teachers and demands for education.

International migration is an unintended outcome of bias towards the training of small numbers of high cost exportable professionals rather than skilled non-professional cadres. The education sector also suffers from high rates of international migration of highly skilled teachers, but this tends to be limited to fewer countries (Jamaica, South Africa) (Santiago, 2002). In one study of migration of doctors (Dovlo, 1999) in a ten-year period showed that within that period 75% of doctors had left the country (Ghana) and that the doctor to population ratio had halved, unlike neighbouring countries. In Ghana at that time, the government paid all medical training. There are large numbers of studies exploring international migration patterns of health professionals. The problems posed by international migration appear to be very country specific but continue to grow. This review cannot take the analysis of the role of migration any further and it remains unclear as to whether migration significantly affects training systems.

4. DEMAND FOR TRAINING PLACES

It is important to see if there is any literature on the sensitivity of training institutions to any change in demand for training places. In most developing countries the publicly funded training institutes tend to use quotas to determine intake of students. The issue of quotas on training numbers is a tricky one and assumes a strong direct relationship between training, predicted wastage and the needs of the labour market. The World Health Organisation (WHO) in their recent discussion paper, imply that admission quotas tend to be historical in origin and not always reflective of need (Zurn, 2002) although empirical data is lacking. In the education sector UNESCO have quantified significant requirements for more teachers to achieve the Education for All (EFA) goals, and have stated that governments need to scale up outputs from TTIs to match increasing need (EFA, 2005). The basis for this calculation is not explicit.

Martinez suggests that public (health) training institutions are in fact seriously underutilised (Martinez, 2002). This conclusion would suggest that training institutions are neither responsive nor sensitive to the demand for training places. As noted in the previous section, student wastage from training is often unacceptably high (Martinez, 2002) which also could suggest that training institutions are not so sensitive to changes in demand for places. The literature suggests that training institute directors do not normally have sufficient autonomy or delegated powers to change their admission numbers and thus improve their performance (Egger, 2000; Johnson, 2004) and reduce wastage. In the case of Nicaragua (Nigenda, 2000), the private medical school already mentioned deliberately reduces its intake to maintain standards, and in order to be responsive to the demand for physicians in the open labour market.

WHO has noted that where admission requirements are changed by health training institutes this affects the demand for places and can be quite controversial (Egger, 2000). There is some evidence from around the world on how governments do open up new training schools, or close down in response to changing need or changing demand, for example the introduction of mid-level practitioners (Egger, 2000). Enrolled nurse programmes were closed in Malawi in an attempt to raise the profile of professional nurses, but this has had the effect of increasing international migration and increasing vacancies for nursing staff in the health services (Egger, 2000).

According to Bennell recruitment into training institutes has been unsuccessful in many countries (Bennell, 2004) and vacancies persist despite best efforts. This is true of vacancies for trainers as well as trainees. In the case of Malawi, it is well known that it is exceptionally difficult to recruit trainers into health training institutes (HTIs), in the absence of workable incentives, and this influences the availability of training places (Egger, 2000). It would appear that the relationship between demand for training and eventual deployment and staffing of services is a highly complex one and not amenable to simple solutions such as changing admission levels or requirements.

Several authors develop the link between training places and the activities of the labour market as being significant. WHO interestingly suggest that no limits on access to training can lead to unemployment, underemployment or accelerated migration (Zurn, 2002). WHO also suggests that skills shortages are not merely a quantitative issue and that training more individuals is not necessarily the answer to skills shortages (Zurn, 2002). The extent to which the recruitment process is centralised is a key factor in shaping deployment outcomes, and Bennell suggests

that without centralised posting vacancies remain high in 'difficult' locations (Bennell, 2004).

Does private demand for training impact on the dominant public sector training provision in any way? Although there is an interest in exploring the impact of demand for private training, there is unfortunately little available evidence in the literature which documents any aspect of how private demand might impact on the supply of public sector training.

To what extent is supply of government funded training places affected/reduced by private demand for training places? This question cannot be answered from the literature reviewed. The early work of Storms (Storms, 1982) which synthesised lessons learned from auxiliary health worker training suggests that non-government institutes/programmes cannot obtain sufficient quantity of government trained skilled workforce and supply their own training in many instances. It is not at all clear if these conclusions hold good twenty years later.

It has been noted that there has been some work done on private sector training provision in Zimbabwe (Bennell, 1998) and although the study focused on vocational training, some of the conclusions might have relevance for more general capacity building in health and education. In a review of training/upgrading provider skills for child health care, there are instances of training private health care providers by government, a discrete activity with limited recurrent funding commitments, but the researcher maintains there was little evidence of sustained impact (Waters, 2003). This training mostly focused on in-service training and specific changes in practice of providers. Waters appears to argue the case for private training for private care providers and with evidence of documented improvements in practice (Waters, 2003).

Baygan (Baygan, 2004) in a review of the production of skilled workers in a developed economy (Belgium) supports the assertion that under strong market conditions there can be real leverage for private funding for training places, and suggests that this can be done through incentives such as tax breaks, donor funding, and partnerships (Baygan, 2004; Bennell, 1998).

In summary, it is not possible to support or refute the hypotheses with any degree of confidence, but it is reasonable to conclude that opportunities to leverage private funding of training could have positive benefits on the training systems, making training institutions more sensitive and responsive to changes in the labour market. This is one area where there appears to be little evidence available.

5. LABOUR MARKETS IN HEALTH AND EDUCATION

How is demand for skilled workers reconciled with supply, and how does this impact on training institutes? Does a true labour market operate in health and education? If market forces do not control demand for skilled workers, what does? Although the importance of monitoring supply and demand for highly skilled workers should be self-evident (Baygan, 2004), the overall picture of supply and demand is not clear in many countries. According to the Abuja document there is an acute shortage of skilled public health sector workers and this is accelerating. The case for human resources in health is exceptional as the sector, it is claimed, is losing skilled staff more rapidly than any other sector (MDG, 2004). On the other hand, oversupply of teachers is also documented. For example in Tanzania one district had 1200 excess teachers on the government payroll over available jobs (Peasgood, 1997).

Three approaches regarding workforce are found in the literature - one is market oriented, one is about pure state planning, and the third is a mixed approach (Dussault, 1999). Market advocates argue that workforce allocation problems are solved more efficiently when suppliers and consumers are left free to interact. However markets are expected to automatically reach optimal efficiency if basic market conditions are present, and do so at a lower cost than the state. Such prerequisites are not usually met in the health sector, hence we normally see significant market failures.

There is also imperfect information leading to more market failure. Competition between providers is not perfect either as access to the market is limited to providers with specific credentials. Since health care has many features of a public good, a private market will be incomplete because there will be no incentives to produce certain services. The health service market is characterised by market failures because assumptions for having perfect competition are violated (Zurn, 2002). The assumption that educational institutions will adjust to new needs of the labour market appears to be unconfirmed (Dussault, 1999)

The labour market is a poor regulator mainly because demand for training is high and information is scarce. Training markets function imperfectly because information (necessary for perfect market operation) is normally unavailable. In difficult development situations (e.g. Democratic Republic of Congo, Burma) the natural labour market is badly distorted by unfavourable local conditions (WCRWC, 2004). It has been argued that low state contributions (%GDP) for education results in the government losing control over the labour market. For example in DR Congo, where teacher's salaries are not paid by the government, teachers are paid by the communities who wish to employ them, and a true labour market exists (Bennell, 2004).

Withdrawal from the labour market needs to be considered when looking at imbalances in the workforce (Zurn, 2002). There is documented evidence that low wages drive people out of the teaching market (Lwin, 2000) and that highly trained teachers move into private sector/non-teaching jobs (Duggan, 1996). The health care sector is essentially public (Zurn, 2002) but is significantly constrained by budgets. Health care personnel are leaving the public sector to join the private sector. There is also an "internal brain drain" in Thailand (Zurn, 2002) from public rural to private urban services. For many reasons therefore, supply of skilled manpower cannot be left solely to the labour market.

State planning is clearly a favoured alternative for meeting demand for skilled workforce which has been popular in many countries/situations. Many countries are

undertaking long-term workforce planning – there are examples from Tanzania, Uganda, Bolivia, Cambodia, South Africa, Ghana (Martinez, 2002). Planning is more likely than the market to correct workforce imbalances (Dussault, 1999).

The literature differentiates various approaches to forecasting and planning both the quantitative and qualitative requirements for a skilled workforce (Zurn, 2002). One approach is *needs-based planning* using qualitative methods to determine system needs (Zurn, 2002). WHO advocates a rational needs-based approach which attempts to match supply to needs (Egger, 2000). Guinea-Bissau limited (reduced) the number of new entrants to medical school to redirect scarce resources to more critically needed health professionals but needed full support of all donors to overcome resistance (Egger, 2000). Lithuania reduced the over-supply of specialist physicians by stopping training (Egger, 2000). Systems modelling techniques for workforce planning can simulate the requirements for different cadres, and have been used more consistently for extrapolating workforce requirements in the health sector (Udompanich, 1997).

For the purposes of this review, needs-based and demand-based approaches are treated as being the same. Demand-based approaches are to a certain extent market-sensitive. The education sector can more precisely estimate demand and there is a strong call for the use of these approaches to plan out for a skilled workforce (EFA, 2005). In one study in Guinea, typical of many in the education sector in Sub-Sahara Africa, it is stated that the public sector however cannot supply enough public school places given the teacher supply situation in the short term. In time, once reforms in the education sector kick in, annual teacher requirements will begin to fall (Tembon, 1997).

State or centralised planning can be based on other methods. Many countries have in the past used norm-based approaches such as population ratios to determine workforce requirements. WHO has been an active advocate of this technique until more sensitive and specific techniques became available in the last decade. Examples are readily available in the literature (Punyasingh, 1997). This gives ready estimates of supply needed. There is an adaptation of this approach which extrapolates from existing school admission figures and factors in planned growth. This method is institutionally based and assumes initial correct estimates (Zurn, 2002). Health workforce availability is thus determined by decisions made in advance in relation to the intake of training schools (Egger, 2000).

There are real problems in using norm-based methods. Pure state planning hardly exists any more according to Dussault of the World Bank (Dussault, 1999) and he suggests that reliance on exclusive State regulation in the production of skilled manpower has not produced satisfactory results. It has been argued that low state contributions (%GDP) for education results in the government losing control over the labour market, for example in DR Congo (Bennell, 2004).

Are private training institutions more responsive to changes in the labour market? Private schools are routinely subject to market forces and have an incentive to employ teachers who attract fee-paying students. Ballou and Podgursky (in Santiago, 2002) conclude that private schools do indeed operate more on market principles and they value teacher aptitude more, pay is less compressed and is higher for scarce skills. Public schools do not face competition for students nor teachers and so do not operate in a free market. Most countries' recruitment of teachers is highly centralised, therefore planned and uncompetitive. There is some evidence that raising standards/requirements for licensing teachers actually inhibits supply (entry

into TTIs) in the USA, where there is a more/most active labour market (Hanusheck and Pace in Santiago, 2002).

6. PUBLIC OR PRIVATE TRAINING PROVISION?

Finally, is there an argument for public over private training provision? Or vice versa? The decision for public training would be based on the hypothesis that public training provides enough supply of high quality workers at a lower or same cost as the private sector. UNESCO tried to compare teacher training institutes in Sub-Saharan Africa but the evidence is insufficient to draw conclusions (UNESCO, 2003). Again cost data is not readily available for either public or private institutes, but some data does exist. In the education sector it is known that TTI unit costs in Guinea are around ten times higher than primary unit costs, and higher also than unit costs for technical and vocational education (Tembon, 1997). Elsewhere in Sub-Saharan Africa (Tanzania) public financing of vocational education turns out to be costly and inefficient associated with a waste of scarce resources, high costs and low returns (UNESCO, 2001). Ethiopia spends only 1% of education budget on TTI (Rose, 1997) and UNESCO conclude that publicly funded pre-service teacher training is inadequate (UNESCO, 2001).

Non-government training provision should not necessarily be deemed as expensive or of a lesser quality, although the available literature is understandably limited (UNESCO, 2001). Non-government inputs into in-service and non-formal teacher training are significant. In Liberia, one out of three operative teacher training institutes are privately run (WCRWC, 2004). In Sierra Leone, training through non-government TTIs, run by different faith groups (Catholics, Protestants, Moslems) provide more than 70% of all teacher training opportunities (UNESCO, 2003). Private financing of vocational education and technical training is successfully organised in collaboration with employers in several African countries Tembon, 1997, Bennell, 1998).

Research suggests that the environment in which private sector strategies are implemented matters a great deal. Where the rule of law is stronger, and where the public has higher expectations of transparency and accountability from the government and the private sector, working with the private sector has greater chance of success. It is not clear whether strong government organisation and capacity is a precondition for success in working with the private sector (Waters, 2003). The Abuja document actually suggests that incentives be given to private colleges instead of seeing them as the competition (MDG, 2004)

The final word can be given to Dr Boonyoen from Thailand (Boonyoen, 1997)
“if markets for health manpower are well developed, then the education and training of health care workers can be accomplished by the private sector”.

7. CONCLUSIONS

- International donors do not always choose to invest heavily in pre-service training of a skilled workforce in health and education. This might be partly based on the absence of evidence on this kind of investment, growing imbalance between supply and demand despite early capital investment, and an underlying concern that pre-service training is not necessarily the most effective solution to problems of supply, although this is speculative rather than evidential.
- External assistance to most countries actively supports in-service training to a significant degree, but this is not generally considered sustainable or continued beyond the short-term. The literature suggests that any scaling up of priority interventions is likely to require significant investments in both initial and continuous training.
- Skilled workers are produced through a wide range of modalities, from lower level institutes, through colleges, and extend to degree programmes in universities. Most developing countries adopt training systems originating from and appropriate to pre-independence regimes and now offer multiple modalities or routes to skilled status. Hence, there are no standard models for training emerging through the literature
- The orientation of training systems for skilled workers could be classified along a continuum from mostly practice based training to highly theoretical training. There is no strong evidence regarding the use of distance learning and e-learning to supplement or replace traditional forms of training but there are now regional networks offering open and distance learning with a reasonable expectation of accelerated uptake of non-traditional forms of training.
- Governments in developing countries retain a high degree of control over all aspects of professional training. Failure to meet strategic development goals is attributed to consistently poor stewardship, an inability to maintain adequate resource flows, and outdated legislation. Centrally controlled enrolment targets for training appear unrealistic and are reactive rather than proactive. A few countries are attempting, with some success, to change the government role in training to be only normative and regulatory, and while this transition is largely successful it is also slow.
- Historically, training of teachers and health workers has been designed and executed with public services in mind. With a changing labour market, and new balance in public/private provision, an increasing proportion of the skilled workforce eventually are employed in the private and/or not-for-profit sector. Many countries are now exploring how to attract private sector employees back into the public services. SWAps can reduce any public/private division of the skilled workforce.
- Given the poor sector stewardship mentioned above, skilled workers should not be seen as having a specific employer or destination. Wastage in training institutions is unacceptably high in some countries, and attrition from the workforce is, in most cases, higher than would be expected from natural wastage. Internal migration effects are strong in most labour markets. International migration is only significant in certain countries and certain

skilled cadres. 'Bonding' evidence is equivocal and is suggestive of ineffectiveness.

- The rent-seeking hypothesis stated in the terms of reference cannot be upheld. There is a stronger case in the literature for reversing the rent-seeking proposition towards 'public' candidates being funded in private institutions.
- There is strong evidence that true labour markets in health and education do not operate effectively for many reasons. Most health and education systems use some form of demand (need) based planning system to predict requirements for a skilled workforce. These are increasingly sophisticated.
- Research suggests that the environment in which private sector strategies are implemented matters a great deal. Where the rule of law is stronger, and where the public has higher expectations of transparency and accountability, working with the private sector has a greater chance of success. It is not clear whether strong government organisation and capacity is a necessary precondition for success in working with the private sector. Again, the sector-wide approach offers solutions. There is the suggestion that if markets for skilled human resources are well developed, then the education and training or health and education workers could be accomplished satisfactorily by the private sector.

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ANNEX 1 TERMS OF REFERENCE

SCALING UP HEALTH AND EDUCATION WORKERS: LITERATURE REVIEW

Background

DFID's Scaling up Services Team is set up to consider service expansion in a world where aid resources are escalating rapidly. As part of this it is looking at addressing the global shortages of health and education of health workers, in particular the 'crisis of health workers' in some countries of sub-Saharan Africa. On health we are engaged with the Joint Learning Initiative and the High Level Forum on Health.

Purpose

The purpose of the four discreet literature reviews described below is to provide the evidence base, and where appropriate examples of successful and unsuccessful interventions, to inform the thinking and work of DFID and its partners. It will identify gaps in the current knowledge base.

Objectives

The objective of these reviews is to understand the evidence relating to approaches to improving outcomes through increasing the numbers, productivity, quality, distribution and retention of health and education workers:

Community and informal health workers – The recent UN Millennium Project (UNMP) report recommended as a 'quick win' a "massive training of community-based workers." Informal/ community-based health workers can play an important role in both preventative and curative interventions. Some experience, e.g. from the Integrated Management of Childhood Illness programme, suggests that, to be most effective and impact on health outcomes, community-based workers need to be supervised and linked to formal health systems. This review will examine the evidence to support or reject the hypothesis that investment in 'community workers' can only impact on health outcomes with parallel investments in trained health workers and health systems.

Increasing the productivity of an existing 'stock' of health workers - training significant numbers of new health workers will take time. Graduate training takes a number of years and many countries have only limited capacity to train doctors and nurses. This review will look at strategies that have been undertaken to increase the productivity of health workers in delivering quality of care to more clients. It will examine the evidence to support or reject the hypothesis that short-term training, incentives, better equipment, supplies and conditions and other things can be employed that improve outputs and health outcomes without increasing the numbers of health workers.

PRSPs and Education – In 2003, the HSRC undertook a review of the human resource content of PRSP and HIPC documentation in 6 selected African countries. This review will undertake a similar analysis to assess how well human resources for education are covered in the PRSPs or linked documents of selected countries in the major change programmes embarked upon by government.

Systems for training – This literature review should cover the history of skills training in health and education in developing countries (mainly low income Africa and Asia) to examine the following hypotheses: i) training for teachers and health workers is normally controlled by the state – but in some instances, the private sector can be regulated to provide quality workers; ii) training institutions for teachers and health workers have largely been developed to supply the public sector, which leads

to undersupply if there are many providers, emigration prospects, AIDS and state-only training of workers; and are normally exclusively controlled by state; iii) private demand for training is often wasted in “rent-seeking” for limited public sector training places; iv) there are useful examples of total-market planning of the supply of skilled workers; v) there are useful examples of public and private provision of training.

Recipient

The work is being commissioned by Policy Division’s Scaling up Services Team. The output is intended to inform the work of DFID and the wider international community when supporting service delivery in difficult environments.

Scope

The consultants will be expected to draw upon a wide range of sources including, but not restricted to:

- Academic
- The International Community:
- Grey literature, e.g. evaluation reports

Method

The consultants will be expected to develop an appropriate methodology in order to systematically conduct and produce the review.

Outputs

The main output from this consultancy will be 4 short reports (maximum 10 pages each) that summarise the literature and evidence in the areas outlined above. Each report should

- Briefly define the problem and its scope
- Use country examples to provide illustrations of successful and unsuccessful approaches
- Where appropriate draw some conclusions of what we know about what works and under what conditions.

Timeframe

The consultancy should commence as soon as possible and all outputs should be completed and agreed by 15 March 2004.

Stages	Time frame	Consultant days	Reimbursables
Literature search of existing documents and information on increasing levels of skilled attendance	Mid to end February	Community and informal health workers – 2 days Increasing productivity of an existing stock of health workers – 2 days PRSPs and Education - 4 days Systems for Training - 2 days Research assistance time - 8 days	
Telephone interviews with country teams for PRSP and Education	End February	2 days	Telephone calls
Analysis of documents and	Early to mid-	Community and informal	Printing costs

interviews to determine the gaps and areas that need further strengthening and report writing	March	health workers – 3 days Increasing productivity of an existing stock of health workers – 3 days PRSPs and Education - 4 days Systems for Training - 3 days	
TOTAL DAYS		25 days expert time 5 days research assistance	

Reporting and Management

The consultants will report directly to Ali Forder (A-forder@dfid.gov.uk). The DFID project officer is Peter Clarke (p-clarke@dfid.gov.uk)

Costs

Across the reports, a total of 30 days of consultancy inputs.