



Working Paper

**Research analysis: Attracting, developing
and retaining effective teachers:
A global overview of current
policies and practices**

by
Bob Moon
Professor of Education
Research Group on International Development
in Teacher Education
The Open University

July 2007

Copyright © United Nations Educational, Scientific and Cultural Organization
2007

UNESCO's Section for Teacher Education commissioned the research leading to this Working Paper in preparation for the Ninth Session of the Joint ILO/UNESCO Committee of Experts on the Application of the Recommendations concerning Teaching Personnel, held in Geneva, 30 October – 3 November 2006. The opinions expressed in this document do not necessarily reflect the official position of UNESCO or its Member States and do not imply a commitment on the part of the Organization.

Contents

	<i>Page</i>
Acknowledgements	v
Executive summary	vii
Key questions arising from the report	ix
Introduction	1
Teacher supply and retention	2
Introduction	2
Europe	2
Sub-Saharan Africa	3
South and West Asia	6
United States	7
Teacher education reform.....	8
Introduction.....	8
Developments in education and training programmes	8
Issues for policy change	12
Innovations in the pre-service and continuing professional development (cpd) of teachers.....	13
Introduction.....	13
Directions of reform for the continuing professional development of teachers.....	14
Conclusion.....	21
 Appendices	
1. Teacher supply and retention in England.....	23
2. General problems for teacher training identified for the High-Level Experts' Meeting on UNESCO's Teacher Training Initiative for sub-Saharan Africa (UNESCO headquarters, Paris, 19-21 October 2005).....	32
3. Summary of critical evaluation of literature on the recruitment and retention of teachers in the United States.....	36
4. Extract from <i>The Professional Profile of a Ugandan Primary-School Teacher</i>	39
References	41

Acknowledgements

Much of the data and analysis within this paper has evolved from a series of research studies carried out by the “Research Group on International Development in Teacher Education across Societies and Cultures” (the RITES group) of the Open University. Appreciation is accorded to the work of the staff within the group and the wide range of partner international research groups who have contributed to collaborative projects.

Executive summary

The Special Intergovernmental Conference on the Status of Teachers held in Paris on 5 October 1966 recognized:

... the essential role of teachers in educational advancement and the importance of their contribution to the development of ... modern society.

In the four decades since the Joint ILO/UNESCO Recommendation concerning the Status of Teachers was adopted, important changes that impact on teachers have occurred. The locus of poverty has shifted from Asia to Africa where the HIV/AIDS pandemic is at its most widespread. Expanding knowledge economies have provided a range of occupations for those who traditionally became teachers, a process affecting all parts of the world. The rapid pace of change in new communication technologies is impacting on economies and education systems alike. This overview looks at these factors and the implications for teachers in respect of:

- teacher supply and retention;
- teacher education reform;
- innovations in the pre-service and continuing professional development (cpd) of teachers.

Teacher supply and retention

In all parts of the world, attracting young or mature entrants into teaching is a major challenge. In Europe and the United States problems to recruit sufficient teachers still exist. In many countries and regions recruitment to specialist subject areas at the secondary phase is particularly problematic (especially in mathematics and science). The age profile of the teaching profession is also problematic with large percentages of teachers likely to retire in the coming decade. Many education systems are supplementing teachers with a growing cadre of para-professionals playing a variety of roles.

In South and West Asia, and in sub-Saharan Africa in particular, acute shortages of teachers exist. In many countries large numbers of para-professionals and community volunteers have taken the place of teachers. HIV/AIDS is also impacting on the number of teachers and exacerbating the problem of teacher absenteeism. Studies demonstrate that a 5 per cent rise in teacher absenteeism can reduce pupil learning achievement by 4 per cent to 8 per cent of average gains over the year. In this context the status of teachers is in sharp decline. An estimated 14-25 million additional teachers will be required if “Education for All” targets are to be achieved. In some countries in sub-Saharan Africa the shortage of teachers is formally acknowledged as a national crisis. In such conditions teaching is far from an occupation that reflects the dignity, stability, peace and credibility which might define a productive working life. In these contexts the power of the school and teachers to help alleviate poverty is significantly constrained.

Teacher education reform

Across the world governments have, increasingly, begun to regulate for the quality and outcome of teacher education (this is true of centralized and decentralized systems of control). Most teacher education remains focused on pre-service or qualification upgrading and continuing professional development is often limited and lacking in coherence.

Teacher education programmes are increasingly focussing on standards or outcomes involving more integrated practical and theoretical curriculum models (although moves in this direction are slow and unevenly spread).

Government initiatives to regulate for quality often meet with opposition from key stakeholders (teachers, unions). The mechanisms for consultation with teachers are often limited and this, in its own terms, is a source of tension between government and teachers.

Policy systems for developing teacher education in sub-Saharan Africa are under particular strain. In overall terms it is clear that existing forms of provision can nowhere meet future needs for pre-service, upgrading and cpd teacher education activity. In a few areas policy systems are beginning to acknowledge this and new approaches are being adopted. Research by the Nelson Mandela Foundation indicates growing community disquiet about the competence and qualification levels of teachers in rural communities. Across sub-Saharan Africa rural communities are the most challenged in recruiting and retaining qualified teachers.

Innovations in the pre-service and continuing professional development (cpd) of teachers

The overview suggests that across the world the expansion of teacher numbers and the need to provide comprehensive programmes of cpd cannot be met by existing institutional structures. In this context, the coming decade will see the inevitable expansion of school based teacher education programmes requiring new and innovative modes of delivery. These are already beginning to appear in particularly challenged regions such as sub-Saharan Africa. The overview suggests that new, flexible and mobile forms of information and communication technologies will have particular importance in the development of research based programmes and a number of research and development programmes are beginning to illustrate this. The need for policy structures that support this, including the idea of a teacher's entitlement to access to cpd, seems paramount.

Conclusion

The summary suggests that, despite some improvement, for example in respect of the status of primary teachers in some parts of the world, millions of teachers are working in simply appalling circumstances. In many contexts teachers are in the process of disappearing to be replaced by largely untrained para-professionals. Little consensus exists as to what constitutes a qualified teacher. Whilst the quality and status of teachers appears to be falling, so the expectations of community for quality education are rising. This represents a political, as well as policy tension requiring urgent attention.

Key questions arising from the report

As a supplement to the executive summary, ten questions have been identified from the report that can inform any debate of current policies and programmes for teachers and teacher education.

1. By what means can the relevance and role of teachers to the “fight against poverty” be further investigated and conceptualized?
2. How can the patterns of supply of teachers, particularly where “crisis” situations exist, be monitored and analysed? In particular what forms of enquiry are needed to interrogate national and international statistical information?
3. What would be the defining characteristics of strong national and local policy structures around teacher supply, retention and training?
4. What models of intervention can be identified, which policy systems could adopt in combating some of the problems associated with teachers (e.g. status, salary, impact of HIV/AIDS)?
5. How can a twenty first century policy framework build in the democratic involvement of teachers into decision making?
6. How can rapidly increasing numbers of para-professionals working with or in place of teachers (sometimes by choice, most often by necessity) be understood and appropriately supported?
7. How can the pressures of increasing community and public interest and disquiet about teacher quality be understood and alleviated, particularly in contexts of acute teacher supply and training crisis?
8. By what means can resource and structures be put in place to provide appropriate pre-service genuine, career-long, to scale, continuing professional development opportunities for teachers? Is the current balance of resources between pre-service and continuing professional development appropriate?
9. How can teachers benefit from the revolution in information and communication technologies?
10. Can a set of entitlements be identified that give substantive dignity to the professional role of the teacher, at all levels, in the twenty-first century?

Introduction

The Special Intergovernmental Conference on the Status of Teachers held in Paris on 5 October 1966 recognized:

... the essential role of teachers in educational advancement and the importance of their contribution to the development of ... modern society.

Forty years on, in 2006, few would quibble with such a declaration. If anything, the significance of teachers in achieving stable and productive societies is even greater. The rapid development of knowledge-based economies has stimulated an inexorable demand for more and better forms of educational provision at all levels. Such demands are geographically and sector differentiated. The achievement of the Millennium Development Goal to provide universal basic education has created a great need for primary-phase teachers particularly in sub-Saharan Africa. Expanding primary systems create pressure to expand the secondary sector with consequent demands for more subject specialist teachers. In all parts of the world access to higher education is growing, with a need for a wide range of teachers. Changes in employment structures are stimulating demand for more and newer forms of vocational education. The quality and training of teachers is crucial to the success of such expansion.

In such contexts there is a clear linkage between the quality and number of teachers and the commitments to alleviate poverty. The role that teachers might play, whether at the macro level of national supply structures or in terms of local community involvement, is little discussed and generally, within the development literature, under conceptualized.

During that 40-year period other changes have taken place that impact significantly on teachers. The extraordinary changes in communications technology is affecting the lives of everyone. In many parts of the world conflict still blights the lives of children and their teachers. Poverty and the associated inequities in health and education continues to remain the world's major challenge. The geography of poverty, however, has shifted. When the Paris Declaration was signed, around 10 per cent of the world's poor lived in Africa and 75 per cent in Asia. By the end of the last century (using 1998 figures) Africa hosted 66 per cent of the poor and Asia's share had declined to 15 per cent (Sali-i-Martin, 2002). In such contexts teachers are both contributors to success and suffer the consequences of stagnant growth.

Any global overview of current teacher education policies and programmes must take account of the distribution of poverty. It gives particular purpose to the work of teachers. It also has consequences for their status and conditions of work. Millions of teachers, particularly in Africa and parts of Asia to continue to live and work in conditions of poverty. In this respect the vision set out in the 1966 Declaration remains unfulfilled. This overview explores that context more fully. It also explores the new and continuing problems that beset the teaching profession in the richer developed regions of the world and points to some changes for the better in the period being considered. The overview is set out under three headings:

- Teacher supply and retention;
- Teacher education reform;
- Innovations in the pre-service and continuing professional development (cpd) of teachers.

In preparing such an overview a number of caveats need to be made. First, teaching is inevitably a cultural and social process reflecting particular norms that have evolved historically. General assertions can neglect the specificity of teacher conditions. Second, data, despite best efforts, can be partial and fail to reflect the current picture. Third, the debate and discussion of the teaching profession is almost wholly, at a global level, conducted around teachers in the school system. Much less attention is given to teachers in vocational institutions in their myriad forms. This is also true (although this is changing) of those teaching in higher education and those in the rapidly changing field of “early years” education. Finally, given the space available the literature and geographical contexts sourced have had to be selective. Sub-Saharan Africa, South and West Africa, Europe and North America provide the sources for the majority of the analyses.

With these caveats in mind, however, there is sufficient literature to tentatively suggest some trends and conditions, that can provide the basis for a consideration of the status of the teaching profession.

Teacher supply and retention

Introduction

Attracting young or mature people into teaching is a major challenge. In many countries of the world supply does not meet demand. The situation in sub-Saharan Africa has been described as a crisis (Dladla and Moon, 2006) and at least one country, Burkina Faso, has officially declared the supply of teachers a national crisis. The representative of the United Republic of Tanzania to the first meeting of national coordinators for UNESCO’s Teacher Training Initiative for sub-Saharan Africa (7-9 March 2006, Dakar, Senegal) reported that teaching in the United Republic of Tanzania was in crisis (E. Mhando, 2006). This problem, however, is not confined to developing countries. In California, for example, thousands of unqualified teachers are working in the elementary system. A special school-based training scheme has had to be developed with new state funds by California State University. In Europe shortages of specialist secondary teachers, for example in mathematics and science, are acute.

To give some indication of the nature of the problem, resources of the conditions in Europe, the United States, South and West Asia and sub-Saharan Africa are set out below.

Europe

There are wide disparities between countries in respect of the supply and retention of teachers. In some countries, France and Germany would be examples, the number of those currently wishing to qualify to teach exceeds the number of positions available. In France, in 2002, 54,826 applicants sat the selective examination for 12,000 primary-teaching posts. In the secondary sector there were 92,759 applicants for 17,200 places. In countries such as Finland and Ireland teacher supply is strong (in the latter only medicine attracts more highly qualified recruits).

In Austria, newly qualified teachers exceed the number of vacancies and many teacher graduates have to wait to find a position. Within that overall figure, however, differences of subject and geography impact on supply. Some specialist secondary subjects (physics) have difficulty in recruiting sufficient teachers. In some provinces (Styria) there is almost no chance of a newly qualified teacher finding immediate employment; in others (Vorarlberg) there are hardly any surplus teachers (Schratz and Resinger, 2003).

There is a second group of countries where teacher recruitment, particularly at the secondary level, has reached crisis proportions. In the Netherlands the Government recognized this as long ago as 1993 when a high profile report, *A profession with perspective*, set out a long-term plan to improve salaries, career development possibilities. In England (less so in other parts of the United Kingdom), whilst primary recruitment has remained strong, acute problems to recruit in the secondary subject teaching areas of mathematics, modern languages, music, science and technology have been experienced. Government response has been to offer large bursary inducements for graduates in these areas to enter teaching. The subjects experiencing the biggest shortage were accorded the largest bursaries. Location also played a part with inner-London experiencing the most difficulties in attracting qualified secondary teachers. The English situation is interesting because of the high level of government intervention and a more detailed description of the supply situation is set out in Appendix 1.

The countries of Central and Eastern Europe provide one-third group of countries. For the most part, supply is satisfactory although in some countries (Albania, Serbia) the surge of refugees at different times has not been able to be matched by adequate teacher recruitment. In Poland, whilst overall figures show a match between supply and vacancies, some predictions show shortages appearing as a consequence of relative salary levels and esteem dropping.

A major issue for Europe is what has been termed “the greying” of the teaching profession. In France, nearly 30 per cent of the teaching profession is over 50 years of age with a retirement age of 60. A third of all teachers are expected to leave the profession within the next five years. In Germany 70 per cent of teachers will retire within the next 15 years. This situation may be worse than it appears. Although the official retirement age is 65, only 6 per cent of teachers work to that age. The majority of teachers are currently taking retirement in their early 50s. A similar situation exists in England where there is particular concern about the age profile of school head teachers. Over 60 per cent of all school leaders are expected to retire during the coming decade (see Appendix 1).

In Europe, therefore, a complex interplay of factors impinge on teacher recruitment. For example, strengthening economies can create problems for teacher supply as opportunities for employment in the growing knowledge-based sector become more attractive (particularly in salary terms). This can be countered. In Germany and France the “civil service” status of teaching appears to act as a bulwark against the ups and downs of economic cycles. In England, however, direct financed inducements have been necessary to avert crisis at the secondary level. Primary teaching, particularly since training in England and most European countries became a university responsibility, has been less problematic. In terms of supply and retention one “bright spot” appears to be the rise in status of primary teachers. However, more analytical comparative work on the interplay of variables that impact on teacher supply at primary and secondary level would be important to the further development of policy in this area.

Sub-Saharan Africa

It seems inevitable that the issue of teachers should feature in the evaluations of progress to UPE that appeared in 2005. This is, however, something of a belated recognition. Few of the declarations, including the declaration of the World Forum in Dakar in 2000 or the MDGs explicitly recognize the importance of teachers to achieving UPE. This was recognized in the position paper produced for the launch of UNESCO’s Teacher Training Initiative for sub-Saharan Africa.

It is only now that people are starting to listen to those who saw the shortage of qualified teachers as a major impediment to national development and that national and international

authorities are beginning to realize that the achievement of the Millennium Development Goals and the Education for All objectives depends on the training of professionals capable of the long-term effort to promote education effectively, in particular through the training of teachers and managerial staff in the education system. (page 2)

The Report of the Commission for Africa (2005) made investment in teacher training a major recommendation and in doing so said:

... the push to achieve EFA will certainly never succeed without substantial investment in teacher recruitment, training, retention and professional development. (page 186)

The scale of need, however, is daunting (see M. Dembele and Bé Rammaj Miaro-II, 2003). Successive reports have pointed to the large numbers of unqualified teachers in schools and the difficulty of attracting new recruits. A survey of 11 eastern and southern African countries by UNESCO (2000) indicated that one-third of existing primary teachers were untrained. Lewin (2002) has documented the shortfall in trained teachers that has arisen, and will become greater, if expansion to meet EFA targets continues. Lewin and Steward (2003) have shown how Ghana has only a quarter of the teachers it needs and Lesotho only one-fifth.

Two factors in particular appear to be impacting on the teaching profession in most sub-Saharan African countries. First, the decline in salaries relative to other comparable professions has been well documented (Colclough et al., 2003). Emergent knowledge economies offer alternative employment opportunities for those who provided the traditional pool of primary teachers. Second, HIV/AIDS is impacting on the existing and potential teaching force. UNICEF (2000) has estimated that nearly a million children a year lose their teacher to HIV/AIDS.

A recent South African report (Education in Labour Relations Council, 2005) drew attention to its finding with the eye-catching headline "A teacher dies every two hours". In Kenya more teachers are dying of AIDS annually than the output of the teacher training institutions (Rémy, 2002). In Zambia HIV/AIDS claims the lives of 2000 teachers a year, again more than the output of the teacher training colleges (McGreal, 2005). A study in Namibia (Melaney, 2000) has shown that where the supply of new teachers remains constant at 1000 the shortfall of teachers with the impact of HIV/AIDS calculated in will be 7,161 by 2010. And this statistic, as in many parts of Africa, does not reveal significant in-country regional disparities. In Namibia, for example, particularly high infection rates exist in the northern regions of Odangwa East and Odangwa West. Predictably these are areas with the largest class sizes and 80 per cent of the total population of Namibia (Melaney, op. cit.). The issue of the impact of HIV/AIDS on teachers has provoked some controversy (see Bennett, 2005). Whatever the scale of the impact, however, it is clear that the pandemic is influencing the working conditions of teachers significantly (see Boler, 2003).

In looking at the pressures on teachers in sub-Saharan Africa the problems of corruption in public services needs mentioning. There is very little data specifically in respect of teachers but where that exists it points to further financial constraints on teachers' lives. In Kenya, for example, Transparency International (2006) has produced evidence to show that bribery around teacher placements and transfers is rampant.

Further detailed evidence of the problems associated with teachers and teacher training, as presented to the High-Level Experts' meeting on the UNESCO Teacher Training Initiative for sub-Saharan Africa, can be found in Appendix 2.

In this challenging context, the word "crisis" is beginning to be used. In Burkina Faso the teacher shortage has been declared a national emergency and people are being recruited

from across the public sectors to fill the immediate gaps (Commission for Africa Report, 2005).

Overall estimates of the numbers of additional teachers needed in sub-Saharan Africa by 2015 are difficult to establish. Similarly, estimates of the total numbers of unqualified teachers are problematic to establish (not the least because countries use different definitions of what constitutes a “qualified” teacher). The Global Campaign for Education (2006), working from UNESCO data, estimates that 14-22.5 million extra teachers will be needed globally to achieve EFA (the number depends on target pupil teacher ratios) and many more serving teachers urgently need education and training. For this reason, the EFA Monitoring Report (2005) gave prominence to teachers:

Achieving UPE alone calls for more and better trained teachers. Countries that have achieved high learning standards have invested heavily in the teaching profession. But in many countries teachers’ salaries relative to those of other professions have declined over the last two decades and are often too low to provide a reasonable standard of living. Training models for teachers should be reconsidered in many countries to strengthen the school-based pre- and in-service training rather than rely on lengthy traditional, institutional pre-service training. (Report summary document, page 3)

Sub-Saharan Africa suffers additionally from two problems that occur elsewhere in the world, but not on the same scale. The first is teacher migration. Europe and North America are actively recruiting graduate level teachers from a range of African countries. The best and most experienced teachers are often the first to go, and investment in training reaps benefits elsewhere. Little robust data exists on teacher migration, but as mobility costs drop it appears to be an increasing problem.

The second problem relates to the millions of teachers being recruited who are effectively para-professionals. The Global Campaign for Education (2006) sees this as in part a consequence of financial restrictions:

The education system in West Africa is increasingly the domain of “para-teachers”, with pre-service training of only a few months or even weeks. This is a direct attack on the quality education which all aspire and are entitled to. With the teacher crisis, quality has often been a hostage of quantity. The trend is to recruit as many teachers as possible, even if they do not have the necessary qualifications in order to respond to expanding enrolment.

Para teacher schemes are large expansion programmes where pre-service training is compressed or abandoned completely, wages are lowered, working conditions are poorer and career paths are limited. They are being used by many governments to cut the costs associated with expanding educational access to all children. The price such governments are forced to pay is the quality of training. This massive recruitment is often accompanied by the mandatory early retirement of more experienced, and often more expensive, teachers in order to cut costs even further. (page 27)

Data is difficult to substantiate. In Nigeria the proportion of trained primary teachers fell from 97 per cent to 72 per cent between 1999 and 2002 as a direct consequence of government policy to increase provision and keep costs low through the recruitment of volunteer teachers (UNESCO, 2006). The forces driving this move to para-professionals are complex. Some argue the importance of World Bank and IMF macroeconomic policies (see Global Campaign for Education/Action Aid, 2005). No doubt these contribute but other factors come into play, not the least the perceived status of teaching that takes time to evolve. This enormous number of para-professionals receives little formal training, is often unlinked to any labour or union support, and constitutes in many developing countries a form of teacher underclass. How such workers are treated constitutes a major global problem (and one not thought necessary to consider in the context of the 1966 Joint ILO/UNESCO Recommendation).

South and West Asia

A recent study by the UNESCO Institute for Statistics (UNESCO, 2006) indicates that South and West Asia is facing a looming teacher shortage in the drive to provide every child with primary education by 2015 ... the region will need an additional 3.5 million teachers by 2015 in order to meet UPE goals and to replace existing teachers. The table below shows this in respect of primary education:

Primary teacher stocks, flows and additional teachers needed to reach UPE by 2015
(in thousands)

Country or territory	Primary-teacher stocks			Primary-teacher flows, 2004-15	
	2004	2015	Difference	Teachers to fill vacancies due to attrition (6.5 per cent)	Total number of teachers needed for UPE and attrition
Afghanistan, Islamic Republic of	68	172	103.8	76.7	180.5
Bangladesh	327	453	125.7	272.2	397.9
India	3 038 ¹	2 988	49.8	2 108.8	2 108.8
Iran, Islamic Republic of	365	332	-33.6	216.4	216.4
Nepal	112	113	0.7	80.6	81.2
Pakistan	432	606	174.2	362.2	536.4
Sri Lanka	73 [*]	68	-4.9	45.7	45.7

Note: The projected teacher stock for 2015 is based upon the estimated primary school-age population in 2015 plus 10 per cent or half the current rate of repetition all together divided by a pupil-teacher ratio (PTR) of 40:1 (or the current PTR if it is below the benchmark).

¹ Data refer to 2003. * UIS estimates.

Some countries face particular challenges. In Afghanistan, the school-age population will grow by 34 per cent over the next decade with a consequent huge demand for teachers (current pupil:teacher ratios are 65:1). Pakistan is likely to have 10 per cent more pupils by 2015 yet today 34 per cent of primary-age children are out of school.

Nilsson (2003) has pointed to the lack of data (and nature of the data) about teachers in the region. Macdonald (1999) makes the same point in arguing for research based on the development of more comprehensive data collection and analysis. Defining qualification levels, for example, appear particularly elusive. But even if the qualification level is low, large numbers of teachers do not meet national requirements. In Nepal 25 per cent of teachers are not certificated. This figure is 30 per cent in the Maldives and 18 per cent in Bangladesh. Nilsson points to the low numbers of female teachers in many of the countries of the region and the impact of this on girls' enrolment in schooling. As in sub-Saharan Africa, HIV/AIDS is also impacting on the teaching workforce although detailed data is difficult to find. The consequences, however, for teachers raises issues for teacher policy of a new and unique kind. As Nilsson points out:

Most HIV-infected persons remain clinically healthy for several years after their infection, but their immune system will gradually be destroyed leading to periods of illness, followed by periods of relatively good health. Infected teachers are often able to teach during the periods of good health but are absent during the illness periods, which tend to come more often and last longer towards the end of the disease. According to estimations from the World Bank, an infected teacher is likely to be unable to teach for a total of 260 days before dying of AIDS. Also, the time spent to care for sick relatives and to attend funerals have consequences on teachers' attendance in schools.

United States

Teacher shortages have been endemic in the United States for a number of years. A series of highly publicised reports have pointed to the problem (National Commission on Excellence in Education, 1983; Darling-Hammond, 1984; National Academy of Sciences, 1987; C.M. Guarino et al., 2006). A wide range of federal and state-wide initiatives have been introduced to alleviate shortages. These include career change programmes such as the “Troops to Teachers” project that sought to persuade retiring military personnel of the opportunities in teaching. Financial incentives such as starting bursaries, paying off of student loans and assistance with housing, have also been deployed (Hirsch, Koppich and Knapp, 2001).

The most recent study (C.M. Guarino, *op. cit.*) has carried out a systematic evaluation of recruitment and retention issues. The main finding demonstrates that good teacher supply depends on the attractiveness of the teaching profession relative to alternative opportunities available.

The relative attractiveness of teaching depends on the notion of relative “total compensation” – a comparison of all rewards stemming from teaching, extrinsic and intrinsic, with the rewards of other possible activities that could be pursued. (page 201)

The study is interesting in pointing up the complex range of variables that constitute “total” compensation. Although focused on the United States it provides one generic model for analysing issues of recruitment and retention. Salary is important but that has to be linked to other issues such as working conditions, support for professional development, and so forth. One implication of the study is that intervention strategies developed by state authorities in the United States (or governments elsewhere) may be insufficiently sophisticated in taking account of this interplay of issues. Given the relevance and recent nature of this work, an overview and conclusions are attached as Appendix 3.

A major analysis of existing data on teacher supply has been carried out by Ingersoll (2004). He indicates that over the last two decades shortages, as predicted, have occurred as a consequence of increased student enrolments, lowering by regulation of pupil teacher ratios (a particular problem in the Californian elementary school systems) and teacher retirements. Most schools in the United States have had the experience of unfilled vacancies.

However, the main problem in the United States, Ingersoll suggests, is due to teachers leaving the teaching profession early rather than the “greying” of the profession or increased enrolments. In that respect teaching has a higher turnover rate than comparable professions such as nursing. Data for 1999–2000 shows that one-third of the teaching force (around 1 million teachers) was in some sort of transition. A number of studies have shown that after five years of teaching, between 40 and 50 per cent of qualified teachers have left the profession (Hafner and Owings, 1991). There is also evidence that the more highly qualified the teacher entrant, the more likely they are to leave teaching (Henke, Chen and Geis, 2000) and that the two main reasons for early departure are cited as job dissatisfaction and the lure of another occupation.

One consequence of high turnover is the widespread phenomena of teachers being required to teach subjects outside their specialisms. Data from Ingersoll (1999) shows that one-third of all lessons in grades 7-12 are taught by non-specialists. In some subject areas the figure rises. Half of all history and science classes are taught by non-specialists. Geographical variations can push this percentage up with, predictably, economically disadvantaged communities experiencing significantly high levels of non-specialist teaching.

In summary terms the problem of teacher supply, in most parts of the world, has grown in recent decades. The manifestation of this problem varies geographically and, in some contexts (sub-Saharan Africa, South and West Asia), the problem is a crisis of huge significance. Within the overall problem of supply, however, are a number of sub-issues, the interplay of which is important for policy. These include:

- the retention of qualified teachers, i.e. the turnover rate;
- the age profile of teachers;
- the subject specialism of teachers, both primary and secondary;
- the gender balance of teachers in different sectors;
- the migration of teachers between different countries (viz. South Africa).

Numerous commentators (Ingersoll, Lewis, *op. cit.*) have pointed to the inability of policy systems around teacher education to grasp the complex interplay of these factors as they impinge on the overall structure and health of the teaching workforce.

Teacher education reform

Introduction

A number of recent studies have looked at global trends in teacher education. Moon et al. (2003) have done this for the UNESCO Europe region. Morris and Williamson (2000) have done this for the Asia-Pacific region.

The first general point to make about these studies is that almost all of them report that the last decade has witnessed an unprecedented array of legislative, regulatory, or other governmental activity directed at teacher education. This activity takes a variety of forms, but overall, the impression is gained that more policy attention has been given to teacher education in the 1990s than in the hundreds of years of history that preceded it. And most of the activity has focused around quality. Much of the latter part of the last century was concerned with creating institutional structures that could provide for the large number of teachers required by mass, compulsory primary, and secondary schools. As the century closed, increasingly high expectations had been established about what teachers should know and be able to practise at the moment of qualification.

A second point is that almost all the activity has focused on pre-service education. In-service education, increasingly referred to as continuing professional development (cpd), remains in most countries at a much lower level of policy interest, with provision often uncoordinated and poorly provided with resources (Villegar-Reimes, 2001). There are some exceptions, and new models of organization are being explored but, overall, the studies reveal a number of major concerns around this question.

Developments in education and training programmes

The quest for improved standards for and improvement in quality of teachers is a core concern. In some countries (Canada and England, for example) a quite dirigiste interventioning approach has been adopted by governments with minimal consultation and supported by strong regulatory frameworks. The Netherlands, faced with similar pressures to review and improve the quality of teacher education, has adopted a more

consensus-building than regulatory approach. The Minister of Education feels a stronger responsibility towards teacher education than to other fields of higher education because of the relationship that teacher education has to the quality of primary and secondary education generally. Teacher education is more strongly regulated than other sectors of higher education. However, a process of consensus building, in which government, teacher educators, and other interested parties are involved, always precedes regulatory activity.

Thus, whilst England and the Netherlands have a mandatory profile of teacher competency that all teacher education courses must work towards achieving, the process by which goals are arrived at is wholly different. In England, a national government agency, the Teacher Development Agency, prepares the goals (the names of those involved in this process are not made known), and a short but formal period of consultation follows. It is not a dialogue but rather the opportunity for anyone to comment. The Agency then considers the comments before passing the recommendations to ministers.

Policy-making for teacher education has to exist within established national and regional structures for education policy-making. Specific contexts have particular interplay of power that does not exist in other contexts. Teachers' unions, for example, have had a major impact on policy making in Poland and South Africa in a way that they do not have in other countries. At the same time, international influences appear to be creating common forms of regulatory activity.

The curriculum of teacher education, particularly in Europe and North America, has in recent years, provoked controversy. In both regions the education and training of teachers has become the responsibility of Universities. Academic and peer pressures within universities have stimulated the development of a strong research and theoretical basis to the more practical orientation that characterised the early teacher training colleges or "*écoles normales*". Attempts to balance theory and practice have, at different times in different places, dominated debate about the function and purpose of teacher education. Teacher educators have found themselves between conflicting pressures. Ministries, schools, and, occasionally, parents, for example, have pressed for programmes relevant to classroom practice and the development of teaching skills. Yet teacher educators have also had to compete for status and prestige against the very different expectations of the academic world.

This debate has also reflected the ambiguous status that teacher and teacher education holds in many countries. Although other professions (medicine and law) have debates about the balance of theory and practical work in curriculum design, the presence of the practical does not, in any way, detract from the academic status of the programme of preparation. Despite this tension, it is possible to detect in the studies a growing confidence about the way the practice elements of training are incorporated into curriculum design and the implications this incorporation has for the relationship between teacher education and schools.

Many teacher educators, independent of any political pressures, have been calling for a new interpretation of practice (Moon, 1996). The University of Oxford in England had, in the early 1980s, transformed its secondary teacher education programmes into almost wholly school-based programmes (MacIntyre, 1990). The German second two-year practically oriented form of preparatory service (*Vorbereitungsdienst*) was increasingly referred to, as was the French model of *Professeur Stagiaire*, also a second phase of training that brings with it quasi *fonctionnaire* (civil servant) status and a salary – true also of Germany.

Canada, England, the Netherlands and South Africa have all, in the last decade, come under pressure, however, to reinforce the practical dimension of training. This adaptation

has been noted at an official level. The Quebec Accreditation Committee is reported in 2000 as saying:

The main benefit of the current reform is with early field experiences and student teaching. Partnerships between faculties of education and schools are delivering expected benefits.

In South Africa a recently published National Framework for Teacher Education talks of the need to form effective partnerships of equals between universities and schools if pre-service education is to be a success (South African Department of Education, 2005). In England, it is clear that, despite the opposition of many teacher educators, the prescribed insistence on extensive school experience in training has led to the formation of partnership models which are now supported by all interested groups.

In the Netherlands, a recent policy document of the Dutch Minister of Education states that “teacher education is part of the human resources responsibility of a school board”, and a variety of innovative forms of school-based training are currently being evaluated. In other countries, the policy imperative to develop a stronger school-base to training has been hampered by resources. In Hungary, for example, a governmental decree defining teacher certification requirements stipulates that at least 40 per cent of pedagogical training should be of a practical nature and yet the financial basis necessary for the implementation of the degree has not been established.

Buchberger (1994) has identified four components that are common to most teacher education courses:

- education studies/studies in the educational sciences;
- academic/subject studies;
- studies in subject matter methodologies/subject didactics;
- teaching practice.

They all exist in the curricula of most countries. There is, however, a shift towards emphasizing the central role of practice and the importance of making didactic and pedagogical studies relevant to that practice. Partnerships between teacher education and schools (often represented as the equivalent to a relationship between a medical faculty and teaching hospitals) has been significantly extended and in some experimental contexts extended to embrace a wider community involvement than just the school.

Danielle Zay has developed a French conceptualization of partnership in the following terms:

Partnership, as a term, can be used to describe the ways in which individuals from different institutions work together. The term, team, we shall reserve for individuals working together from within one institution.

This approach, for the first time, ensures that the way the education system is situated within the broader society and local community is given the same attention as the traditional axes that underpin teacher education courses: disciplinary knowledge and classroom apprenticeship.

The ability to work with partners in this way is one of the professional competences that must be acquired.

The teaching profession does not operate exclusively within the classroom. It also requires collaborative work with a large number of partners; first of all with the parents of pupils with whom it is important that the teacher establish a regular and genuine dialogue;

then with associations and partners with connections with the socio-cultural environment. Teachers at all levels, but particularly those in the technical sector, have to be familiar with the world of economics and be prepared to establish and manage relationships with industry or the professional sectors. (Zay, 1994)

The more developed the partnership approach and practical component of programmes, the more likely that assessment formally incorporates a model of competencies, outcomes, or standards. The Dutch have accomplished this task through the consensus process. English teacher educators have had to accept a model that was centrally imposed with a minimum of consultation. The majority of countries do not formally prescribe “outcome” requirements of courses. There is a sense, however, in which, whether by ministerial decree or through the choice of teacher educators, a stronger conceptualization of qualifying standards is becoming much more explicit than was traditionally the case. In many instances, this explicitness goes with the grain of similar developments to make the outcomes of the school curriculum more explicit.

The way different stakeholders are involved in decisions about the forms and outcomes of teacher education has been the subject of much debate. Many have argued the importance of two-way communication mechanisms allowing teachers and others (union representation, parents, for example) to feed in their ideas on policy proposals and on implementation success and problems (Shrestha, 2005). A UNESCO analysis of teacher reform in the United Republic of Tanzania makes the same point:

A key lesson from the Tanzanian experience is that formal communication channels, while important, are not enough to incorporate teachers’ voices in educational decision making. Extra steps are needed to overcome misunderstandings and bring in the views of local and district union leaders. (UNESCO, 2006)

The issue of teacher involvement (directly or through professional associations and unions, relates directly to the issue of centralized/decentralized structures of control in education systems (see also Frederiksson, 2004; UNESCO, 2005). The Global Campaign for Education has argued that:

... unions and ministries should work together to ensure mechanisms such as participatory active research, opinion polls, surveys, questionnaires and radio and television phone discussions. (Global Campaign, 2006, page 54)

should be used to seek out teacher “voice”. A view supported in an earlier OECD/UNESCO study (2001) which suggested that more information is needed about how teachers themselves view their profession and its demands and incentives, particularly at the classroom level.

In looking at the substance of teacher education reform globally, a number of trends can be identified. The move towards a more practical, outcomes-based approach is one. The linked need for partnerships between the providers of higher education (mostly universities or university and colleges) and schools is another. The development of a more coherent curriculum, built around the daily work of the teacher rather than traditional disciplines would be one-third.

There is, however, concern about the education of teachers and this is particularly true of sub-Saharan Africa. The 2005 Global Monitoring Report is a recent example of an international document on EFA challenging the status quo around teacher education in the region. A number of research reports and articles (Lewin, 2002) have also sought to give prominence to the issue. Moon (2000), for example, suggested that the dominant model of twentieth century teacher education, “bricks and mortar, campus-based initial training” would be insufficient and inadequate to meet the needs of the twenty first. He makes clear that this is not to say there is no role for traditional campus-based provision. But he

suggests that the functions and purposes of many institutions could change, particularly where they embrace the challenge of providing career long professional support for teachers.

Issues for policy change

One of the major challenges facing teacher education in many countries is to provide a stable policy basis for development. Lewin (2002) following a series of well reported research studies in the region concluded that policy on teacher education is fragmented, incomplete and, more often than not, simply underdeveloped. In this context some key problem areas frequently go unaddressed. Six in particular are pertinent to rethinking teacher education.

The first is the way resources are directed to long, three- or four-year, courses that produce only a minority of the teachers required. In some contexts, therefore, whilst such a minority receives considerable support a parallel process is taking place to recruit significantly more unqualified teachers into the school system.

The second is the way in which primary teachers use qualification as a means to either enter other forms of employment or graduate to secondary teaching. Significant resources are being devoted to “primary teacher upgrading” without any hope of a return in terms of an improved quality of teaching in schools. This is an issue that touches more widely on policy around teacher salaries and incentives but the impact on the effectiveness of education and training can be huge.

Third, and following from the above point, teacher status, particularly at the primary level, is increasingly problematic. Salaries clearly are important (Colclough et al., 2003) but there are more subtle issues associated with community standing and respect that are more difficult to define. A recent report on education in South African rural communities (Nelson Mandela Foundation, 2004) highlighted the concerns of parents, pupils and others about the commitment and status of teachers.

In many communities there is a deep rift between teachers and the guardians of children in their care ... Criticisms of teachers encompass a complex set of issues related to their lack of qualification, subject knowledge and sense of vocation. (page 107)

The research team from the Nelson Mandela Foundation interviewed a wide range of participants in the educational process and identified a strong lay concern about teacher qualifications. They quoted one community leader as saying:

Some teachers are not well qualified and they are a problem to learners who are willing to learn. Due to the lack of knowledge on the part of teachers, learners are forced to study what they don't like or want and in which they are not interested. (page 107)

The Mandela Foundation report goes on to identify fourthly, an important area of concern, the form and nature of the teacher education curriculum for those who can gain access to it. They perceive a legacy of:

... colleges that proliferated across the homelands and purveyed little more than a repetition of the high-school syllabus wrapped in an authoritarian pedagogy. (page 108)

It was in part a response to this sort of critique that South Africa has integrated teacher colleges into the higher education sector generally and moved to an “outcomes”-based approach to curriculum design with classroom effectiveness at the core of requirements.

This has been less true in other countries. Much curricula, whether regulated by government agencies or by university authorities, remains organized around the traditional idea of “disciplines” of education and subject knowledge. Frequently these are taught separately and without reference to the pedagogy through which the teacher’s task has to be carried out.

Fifth, where qualification upgrading courses exist, they are often focused wholly on the “individual teacher qualification needs” without any reference to the impact such an upgrading process could have on immediate colleagues or the school as a whole. In some schools neither a teacher’s colleagues, nor the head teacher may be aware that the teacher is following an upgrading course. In some contexts the content of the upgrading course require no practice or experimentation to be carried out in the school in which the teacher teaches. Carried to its ultimate the separation of training from schools in this way can lead to serving teachers being asked to leave their classes and go through a “pre-service” type teaching practice close to the college or university provider. In such programmes very little attention is given to accrediting or acknowledging prior experience and unqualified teachers who may have been teaching for ten or more years are treated “as if” they were a new young trainee.

The sixth and final policy concern is the inability to develop programmes at scale. Whilst the prime mode of thinking remains pre-service, campus-based provision, the possibilities of moving to scale are limited. It is for this reason that many countries have come to revisit ideas of open and distance learning. Distance education and teacher education have strong links that, in some countries, have a long lineage, however, but distance education has traditionally had an image problem (Lewin, 2002) and has often been seen as a threat to existing providers. But distance education has the positive characteristic of potentially being able to work to scale and, despite mixed reports, some evaluations point to effectiveness where certain key programme structure variables are built in (Devereux and Amos, 2005).

These issues are not particular to sub-Saharan Africa. As the studies by Moon and Morris and Williamson (op. cit) demonstrate, some of the concerns exist in Europe and in Asia. It is, however, the presence of all these problems alongside the acute teacher shortages already outline that make sub-Saharan Africa a region of great concern.

The launch of the UNESCO Teacher Training Initiative for sub-Saharan Africa in 2006 should contribute significantly to enhancing and improving policy systems. However, the time scale for the full roll-out of this initiative is lengthy and some of the crisis problems do appear to justify a “crisis policy” response as well as the medium, long-term capacity build. How long national and international systems can allow the continuance of some of the teaching conditions that currently exist may become an increasingly important policy question.

Innovations in the pre-service and continuing professional development (cpd) of teachers

Introduction

The discussion of the teacher education curriculum has pointed to a number of new approaches within pre-service education. The increased emphasis on practical training orientated towards specific competences as outcomes is one. The partnership roles between universities and schools is another. A further range of innovations, however, address some of the problems of teaching, in particular the need for large numbers of additional new teachers to meet the demand for EFA. Before looking at this important area, however, it is

important to observe that new and innovatory policies in this respect are not confined to countries in the developing world. In England a shortage of teachers in some secondary subject areas has stimulated a range of initiatives. These include:

- the allowance for schools to recruit graduates without prior training provided an education and training programme can be put in place;
- a provision for unqualified graduates to enter teaching for a two year period in an almost “peace corps” structure;
- flexible forms of teacher training aimed at attracting native entrants into teaching.

The acute crisis in elementary teacher supply in California has already been referred to. The response has been an initiative by the State Governor to provide funds for California State University to run a programme of school-based training, based around the use of information and communication technologies and distance education. This programme titled “CalState Teach” operates across California.

Inevitably some of these initiatives have attracted controversy. The graduate teacher entry scheme in the United Kingdom has been criticised for the quality of training provided (OFSTED, 2005). CalState Teach was vigorously resisted by some parts of the teacher education and training community when first established. External independent evaluation, however, is now giving the programme very high ratings.

It is clear that across the world the expansion of teacher numbers and the need to provide comprehensive programmes of cpd cannot be met by existing institutional structures. In the coming decade school-based teacher education and programmes will inevitably expand. How such programmes are structured and supported becomes a key issue. This is particularly true in those areas of the world where teacher shortages are most acute. Developments in this area are not new. For example, in many parts of sub-Saharan Africa distance education has been used to upgrade the qualifications of teachers. Not all have been of the deserved quality. A review of such programmes in South Africa in 1995 (SAIDE, 1995) talked of distance education provision for teachers as of questionable quality dominated by a few large providers administered by white male managers and with a lack of any attention to student support.

Recently courses have begun to develop with much more attention to quality assurance mechanisms than has traditionally been the case. The World Bank has recently published a toolkit for educators and planners around the issue of designing high-quality school-based teacher education programmes in sub-Saharan Africa (Moon, Leach and Stevens, 2006; see also NADEOSA, 2005). Research projects, funded by organizations such as DFID and the World Bank (Leach, 2006; CAPSSA, 2006) have begun to identify and promote examples of the direction new models might take. Many of these build on well established models derived from face-to-face and distance education. The six case studies identified in the CAPSSA study, for example, represented different modes of approach, although all were focused on workplace, school-based training.

Directions of reform for the continuing professional development of teachers

In preparing this research analysis a synthesis of case studies was carried out to identify key issues that developers need to consider. Three issues were identified as of particular significance:

-
- curriculum
 - time structure; and
 - technologies.

Across the case studies, three illustrate the ways in which emergent new models of provision are trying to respond to such issues.

University of Fort Hare: Eastern Province, South Africa: A curriculum led innovation

Curriculum reform in teacher education is on the reform agenda in many countries (Moon, 2003, op. cit.). In South Africa the last decade has seen a significant shift to an outcomes-based approach in the teacher education and school curriculum. Allied to this have been moves to ensure that teachers promoted more active forms of pedagogy than has traditionally been the case. Over the last decade the University of Fort Hare in the Eastern Province has adopted a curriculum led reform programme to upgrade primary and secondary teacher qualifications. The Eastern Cape had over 130,000 under-qualified teachers working in schools in 1995. The University of Fort Hare working closely with the provincial government developed a school-based distance education programme that had at the core a new model of the teacher education curriculum. All courses offered were built around a series of activities that teachers carried out with their classes and in the school context. The course mirrored in its conception the style of teaching and learning that teachers were expected to adapt with their classes.

The Fort Hare approach, which has been evaluated and widely reported (Moon, 2000; Devereux and Amos, 2005), also introduced a series of interrelated processes to support the activity-based approaches. Staff from the provincial government, working out of local offices, provided tutorial and value in school support. The programme resources were written (under the title of Umthaniso, isiXhosa for “bite size”) around the activities and key activities within each were used for assessment purposes. Formal examinations were dropped in favour of continuous assessment. The structure of the course allowed the teacher to use “school time” as “course time” and most teachers were expected to complete a Diploma in two to three years as a full Bachelor degree is not more than four years.

The National Teachers Institute (NTI) Nigeria: A time structure-led innovation

NTI is a well-established institution with over 800 study centres across the region. It runs a range of programmes. NTI has recently embarked on an ambitious strategic plan built around teachers’ needs in the twenty-first century. This includes exploring the way in which teacher education can also contribute to community development (NTI, 2003) (a theme also being pursued at the University of Fort Hare). Recognizing the urgent need to provide faster routes into teaching NTI has developed a new fast-track Pivotal Teacher Training Programme (PTTP) which annually prepares over 30,000 teachers. The course lasts eighteen months with 15 months of preparation using NTI open and distance-learning resources and a three-month internship. Significantly it is not seen as a terminal teaching qualification and those graduating are encouraged to follow a school-based course to achieve the National Certificate of Education (NCE), which is the nominal national three-year route into teaching. What is of particular interest in the Nigerian context is the way in which the PTTP curriculum has been aligned to facilitate the move from initial into school-based in-service training.

The Open University of Sudan: A technology-led innovation

The Open University of Sudan has been set ambitious targets by the national Ministry of Education. By 2008 numbers will have increased to 130,000, many of whom are teachers seeking to upgrade their qualifications. A wider range of courses are on offer and regional study centres established. The university, however, is already experimenting with on-line offerings. Connectivity is improving rapidly. Access in urban areas should provide sufficient users to make an on-line offering feasible and plans for extension to rural communities should ensure national coverage over the next ten years. The Open University of Sudan, therefore, sees the extension of on-line provision as a major way of addressing the challenge of moving to scale. By 2008 the university expects an on-line offering to extend to all subjects. Currently courses in Arabic, English and study skills are offered through the virtual learning environment (VLE). Computer Studies and Business Administration courses are shortly to be launched. The Open University of Sudan has chosen to adopt the open source Moodle environment as its VLE and an extensive programme of staff training to provide on-line support has been put in place.

The three examples from Nigeria, South Africa and Sudan exemplify some of the conditions that need to be in place if successful reform is to be achieved. The scale of the crisis around teaching quality can only be met if these conditions are integrated into policy thinking and programme design (Moon et al., 2006). Such conditions both address the problems with existing models of provision and provide the framing factors around which new models can be built. The following seem of particular importance:

- Reforming curriculum

The curriculum needs to focus more, particularly where education and training opportunities are constrained, on core classroom skills and understanding, particularly pedagogies that are more effective in raising achievement: teacher education programmes, therefore, need to be conceptualized in ways that incorporate the daily life and work of the teacher in the classroom.

- Rethinking the period of time for initial training

This is already happening in some countries, as the case studies above indicate, but in others tight regulatory frameworks mean that some trainees receive three or four years campus-based training whilst larger numbers of wholly unqualified teachers are put directly into the schools; a move towards shorter initial training linked to opportunities for ongoing schools-based continuing professional development would provide training opportunities to much larger numbers of teachers.

- Exploiting technologies

This paper argues strongly that, over the next few years, the opportunity and entitlement for education and training can be significantly enhanced if the revolution in communication technologies is, in an evolving way, built into play and practice around teacher education.

There are signs that an understanding of these issues is beginning to emerge. Projects like Mindset (www.mindset.co.za) and SchoolNet (www.school.za) in South Africa provide pointers. The DEEP project has already been referenced. The African Virtual University based in Nairobi (www.avu.org/) is developing a range of resources and courses that can be utilized within new, school-based programmes of teacher education (Dzimbo and Barasa, 2006). Research on the sort of support required by such programmes is taking place (Aguti, 2006).

Response at scale also requires co-operative modes of working. Few institutions, particularly those that are residential and campus based have the infrastructure to support programmes working to scale. Examples of a move to new forms of cooperation now exist. The Teacher Education in Sub-Saharan Africa (TESSA) project is a consortium involving international and national institutions (nine sub-Saharan African countries are involved) that will provide resources and systems to support the development of school-based teacher education programmes across the continent (www.tessaprogramme.org).

TESSA is an “open content” project providing web- and text-based resources for use initially with primary teachers but extending eventually to all the secondary subjects. It is not a training programme per se but rather it is providing the tools and content which will allow local developers to create school-based programmes. Whilst providing text resources TESSA is premised on the assumption that online modes of working will become increasingly important. The foundations for the effective exploitation, therefore, need putting in place now. TESSA will, for example, be piloting the use of a number of web-based “tools” allowing local developers to take content frameworks and version them to local contexts. TESSA, on a large scale, is a research and design project that will contribute to understanding of the factors and variables that facilitate the successful building of new models of provision.

TESSA also, in preparation, used eight factors identified in earlier work by Leach and Moon (2002) that, it is suggested, contribute significantly to the success of school programmes.

- vision and sustained commitment on the part of government, educational leaders and policy-makers, to professional development, including ensuring effective technological infrastructures that can support ICT components.

This was a strong factor in the effectiveness of the University of Fort Hare and Eastern Cape Province collaboration.

- clearly identified outcomes for teachers, linked closely to their individual, as well as school’s ongoing professional needs;
- a curriculum of school-based professional activities, adaptable to local context, progressively structured and providing a common framework and discourse within and across school.

The South African commitment to Outcomes Based Education (OBE) and active learning provided an important basis for the work of the Digital Education Enhancement Project (DEEP).

- access to high-quality multimedia resources that utilise ICT, use teachers’ own language(s) and which integrate exemplars that reflect local culture, education and practices.

Somekh (2001) has noted that it is still much more difficult to design high-quality learning materials for electronic delivery than paper-based materials. However, many effective models are emerging in different parts of the world, not only in education, but also in architecture (Eddy Spicer and Huang, 2002); art and design (Bennett, 2001; <http://www.open.ac.uk/eci/omnium/omniset.html>) and medicine [<http://www.pitt.edu/~super1/>].

- clarity of roles, responsibilities and modes of communication between different actors whether at school, regional or national level;

-
- strong support, that is rooted in local contexts and existing structures, which is closely monitored to ensure its effectiveness for teachers in differing settings.

The structure of support provided, for example, by the National Teachers Institute in Nigeria, offers a national framework of provision but in ways that allow local adaptation and ownership.

- provision of carefully planned, well managed online environments, allowing for the collaborative development of professional knowledge;
- rigorous quality assurance processes, operating at every level and dimension of practice, seen to be responsive to teacher feedback and external evaluation.

The TESSA programme seeks to research and develop programmes that exemplify these two dimensions.

Changes in communication technologies offer one of the most important opportunities for innovation. It is, however, important to put such innovation within a pedagogic framework. It is a characteristic of human behaviour that artefacts and tools of one sort or another are appropriated for learning and development. In the educational context these can appear rudimentary (viz. a chalkboard) although the history of use may be complex and sophisticated. Amongst those who have taken a socio-cultural approach to learning and teaching Jerome Bruner has been particularly assiduous in exploring the “toolkit” metaphor. He has argued (Bruner, 1996) that if pedagogy is to empower human beings then “it must transmit the “toolkit” the culture has developed for doing so” (page 17). And he goes on to suggest that it is commonplace “that any maths major in a halfway decent modern university can do more mathematics than say Leibniz who “invented” the calculus – that we stand on the giants that preceded us” (ibid., page 18). We must understand “toolkit”, as Bruner’s example suggests, in the widest possible understanding that goes beyond mere mechanics. And for Bruner it is the shared understanding and use of such a toolkit through the learning community that is important:

One of the most radical proposals to have emerged from the cultural–psychological approach to education is that the classroom be reconceived as ... a subcommunity of mutual learners, with the teacher orchestrating the proceedings. Note that, contrary to traditional critics, such subcommunities do not reduce the teacher’s role nor his or her authority. Rather the teacher takes on the additional function of encouraging others to share it. (ibid., page 21/22)

These preliminary observations are important in looking at the technological context of educating and developing teachers. Technology must be understood in the broader framework of the communities that characterize learners. For many teachers, particularly in rural communities, the notion of community has been heavily constrained. Recollections of a rudimentary training, random contacts with peers, occasional access to ideas about teaching portrayed through the media. Opportunities in such contexts for interpersonal communication, the working out of the learning community are spasmodic and incoherent.

However, just as the need for such communication becomes most pressing so a society is creating new models of connectivity that offer, it appears, limitless opportunities for creating new modes of learning communities. Digital communication technologies are spreading rapidly across sub-Saharan Africa. Africa now has the fastest growing telecommunication sectors in the world. And the mobile sector in particular is growing at an exponential rate (Minges, 2004).

Of particular significance is the release from reliance on cables and heavy equipment that has come with the wireless and mobile revolution. In part this is driven by commercial imperatives. Fishermen off Zanzibar can now telephone to find which landing market is

offering the best price! But the growth in the use of mobile/cell phones reflects a deeper human need for being “in communication” (a recent report has described how teachers in Ghana are now very resistant to teaching in rural areas where a mobile phone signal cannot be received) and it is this potential that education in general, and teacher education in particular, can draw on. As a leader in the *Economist* recently expressed it:

The idea that a digital divide separates rich countries from poor, as usually understood, is a myth ... Poor countries don't need a PC in every home. What they need is more mobile phones.. (*Economist*, 2005)

Technological change offers the opportunity to enrich the pedagogic toolkit of teacher educators and teachers in hitherto undreamt of ways. Information and communication tools are becoming increasingly portable, flexible and powerful and numerous studies point to the potential of these new technologies as learning tools (Soloway et al., 2005). A major research report from the United Kingdom's Department for International Development (Leach, 2006) has demonstrated the values of mobile communication systems for teacher education. See also Kukulska-Hulme and Traxler (2005). The Digital Education Enhancement Programme (DEEP) has been developing strategies for primary teachers in the Eastern Cape, South Africa and in Egypt to develop their skills in the teaching of literacy, numeracy and science through resources and communication systems derived from handheld computers, cell phones and other related technologies. Using both quantitative and qualitative research instruments the project has demonstrated the conditions under which successful use of such technologies can be established. The trend to incorporate these new forms of ICT into policy and practice is gathering pace. In Rwanda, for example, an ambitious plan to ensure nation wide connectivity is being put in place. And most countries have policies in place that seek to achieve similar outcomes. In looking to ICTs from a developmental perspective experience such as the DEEP project suggests that policymakers and practitioners need to think of technology in the broader conceptual mode set out at the beginning of this section. New forms of technological communication require more than just a mere “roll-out” of infrastructure and equipment. It is clear that within less than a decade widespread connectivity will become commonplace in even the most remote part of sub-Saharan Africa. To realise the potential of this conceptualization of use and experimentation in use needs to be urgently addressed.

New communication technologies have potential for the continuing professional development of teachers. Looking at provision for cpd, however, the overall picture is unclear. The overall trends and organization that provide many common features to pre-service education do not exist in the in-service field. A myriad of different provisions exists within and among countries. Many studies have pointed to the perceived inadequacy of many existing structures to meet the needs of teachers working in modernized education systems. It is clear that investment in teacher education remains heavily skewed towards pre-service provision (Moon, 2003).

Induction programmes for the early years of teaching do represent an area of increasing coherence. The status of initial teacher education in Austria, Germany, and France incorporates an induction element into a training programme. England has a formal system of training for “newly qualified teachers”. Beyond induction, however, a much less coherent picture emerges.

In Finland, for instance, a systematic in-service teacher education system is not functioning. Regular in-service teacher education in the Finnish teacher education system is badly needed. Training is not conducted in a planned and systematic way. The area of in-service policy and organization requires major improvements.

In most countries, continuing professional development appears to be offered by a variety of providers, including, increasingly, private organizations. From the perspective of

the teacher what is offered is not always coherent and related to need, and access to such provision can be difficult, particularly in some rural communities. Very little attempt is made to record the involvement of teachers in the upgrading of their knowledge and skills. Some countries have set aside a certain number of days or working hours for professional development, but again these appear to be used in relatively unplanned ways.

Some examples of systemic national attempts to address the coherence of professional development can be found. Uganda, for example, in 2004 published an ambitious document, “The professional profile of a Ugandan primary-school teacher” (Ugandan Ministry of Education and Sports, 2004) that sought to profile:

... the key knowledge and skills, the tasks, and the levels of competence of the teacher in performing key tasks. Each of these tasks...described in terms of applicability in the classroom or the school or the community. (page 1)

The profile identifies a continuum between unsatisfactory and excellent in the carrying out of these tasks. Appendix 4 provides an example for the tasks associated with classroom management.

Despite the apparent incoherence, there is a range of interesting ideas that can be observed, some relatively new, that can inform wider debate in this important area. Higher education institutions are involved in most of these initiatives and in most countries are likely to remain a major source of professional development provision. A few of the examples of innovation are described below.

The Manitoba School Improvement Initiative is a school-based initiative (mirrored in a pan-Canadian initiative “Shape the future”) that involves teachers in action research and focuses on teacher development and professional growth. Individuals and groups of teachers adjust their professional development to school-wide priorities.

In Croatia, following a process of collaboration with schools, a catalogue of thematic courses is offered to teachers and schools. The range of courses offered and the involvement of teachers are monitored.

In England, professional development courses are being targeted as national priorities. In the 1998–2001 period, a significant investment was made in the teaching of literacy in primary schools, and the standards of pupil attainment have increased significantly.

In France, professional development has recently been brought together in an overall training plan developed by each *académie*. Central priorities are set, but how these are achieved is left to local decision-making. In 1999, the professional development priorities set by the minister included ICT practice in schools, the use of research findings to update the knowledge of teachers, and support for newly qualified teachers.

In Hungary, the government has specifically addressed the importance of professional development. Schools receive per capita (per teacher) grants for training to spend freely on the training market of accredited programmes. Heads of schools have to prepare a five-year plan and corresponding yearly schedules concerning the participation of their teachers. The most innovative part of the new system is the accreditation scheme. It involves “entry control” to the training market, but leaves it to schools to choose, implement, and evaluate the programmes.

In Ireland, an In-Career Development Unit of the Education Ministry has been established to coordinate professional development, and teachers are given three days’ leave per year to attend courses approved by it.

In Italy, 20 regional institutes are coordinated by the national ministry in the task of planning, stimulating, coordinating and supporting research, experimentation, and professional development. These institutes act in cooperation with universities, teachers' associations, and teachers' unions in planning programmes.

In Poland, teacher counsellors are elected from amongst experience teachers by teachers of the same subject. They then receive a reduced teaching load in order to provide support and guidance to other colleagues.

In Romania, "teachers' houses" have been set up. They act as local training and documentation centres. Of particular interest is the way in which they establish methodological commissions "that link subject specialists who may be a solitary specialist in a school, to those teaching the same subject in other schools".

There are also a myriad of subject focused institutes. The Freudenthal Institute in the Netherlands, for example has developed "realistic mathematics education" (RMEs) in South Africa, Brazil, Malaysia and a range of other countries.

There is, however, widespread recognition of the need for greater coherence including strong linkages to policies that focus on school improvement. Local cpd services and higher education has traditionally provided "courses" for individual teachers of varying lengths (and, for a very small minority, higher degrees). The extent to which local services and higher education is staffed and granted resources with which to contribute to the more partnership and professional learning developmental approaches set out in some of the studies will be problematic in some instances.

New interactive technologies have a role to play in supporting more school-based, network-style approaches to learning. Some higher education institutions (particularly the dedicated "open" universities) are adapting to serve this role. The extent to which the traditional institutions of higher education expect to play a role in on-line support and development appears unclear or "untaught about" in many contexts. The Commonwealth of Learning based in Vancouver has published a number of important reports around this theme (www.col.org/).

It seems inevitable that the focus in teacher education may shift away from the traditional preoccupation with pre-service training to a more policy-led concern with professional development. In a context of constrained resources, this development may involve some redistribution of resources. The form and nature of the contributions of higher education to the professional development of teachers require a much stronger articulation of the "knowledge, skills, and understanding" that are generally associated with universities if they are to be transposed into these new forms of programmes and provision.

Conclusion

The executive summary and key questions at the beginning of this research analysis provide a list of the key issues that have been addressed. This conclusion is not, therefore, a summary but rather a reflection on some of the key issues that emerge.

The first is that teachers in some parts of the world are working in simply appalling circumstances. Ms. Mokoteli and Ms. Ramokejae (actual teachers) teaching first-grade children on the edge of Maseru, the capital of Lesotho, have 210 children in their class. Ms. Molotsi and Ms. Mpalami (also actual teachers) in grade 2 have 205 children. Whatever the rhetoric of reform and improvement, these conditions still exist across many parts of sub-Saharan Africa and South and West Asia.

The extremes of teacher conditions make global dialogue difficult. The debate about teacher education is, therefore, a divided one. Little attention is given to the needs of

teachers in South and West Asia and sub-Saharan Africa in the mainstream teacher education discourse of Australasia, Europe or North America. The inequities are very much appropriated to development specialists and international organizations. Many teacher educators in developed parts of the world have no idea of the nature of the inequalities that exist across the global teaching profession.

The second point relates to the first. The identification of the characteristics of a “teaching profession”, that was part of the 1966 Joint ILO/UNESCO Recommendation concerning the Status of Teachers, has not been met in many parts of the world. Whilst the descriptor “teacher” is used it may frequently refer to someone who at best could be considered a para-professional with little formal education and no specific teacher training. In some countries teacher and teacher education policy systems appear to turn a guilty but blind eye to the causes of this and the consequent needs of those playing this role. In some countries government policy is to expand the numbers of para-professionals as a means of supporting teachers. In others the rise of the para-professional has been a direct consequence of the crisis in supply and retention. Gaining some agreement on where the formal title “teacher” can be used remains an issue.

In such a context teachers and para-professionals may have little voice in the organization of their work and the education and training it requires. There are exceptions. In the Netherlands and South Africa, for example, the last decade has seen an unprecedented level of consultation. But in many countries this has not happened. Sometimes this has been through specific policies (leaders such as President Clinton in the United States and Prime Minister Blair in the United Kingdom have used interventionist, authoritarian policies towards teachers as part of their explicit political reform strategy) but more often, particularly in those contexts where the supply and retention of teachers is in crisis, the policy structure is too weak to achieve any involvement or overlap of direction with teachers.

One of the provisions of the 1966 Joint ILO/UNESCO Recommendation focused on the need to achieve international recognition of teaching credentials conferring professional status in terms of standards agreed to internationally. It is clear that the world community is a long way from achieving this. Although the debate about standards has intensified and the technical means of applying such a model to teaching becomes more sophisticated vast differences between, and within, regions exist. The inevitability of most teacher development being “school based” for example (as de facto it is in most parts of the world for cpd) has received little attention in terms of the standards debate. What sort of experience should a teacher expect when most or all of their professional development will be taking place in the school within which they teach? What types of framework of provision should schools and the agencies that support them be making for such provision? How can new forms of communication technologies be integrated into provision? Should there be a notion of entitlement around access to ICTs?

One of the most important trends that are beginning to be manifest is the increasing “public” ownership of issues that traditionally have been the preserve of the teaching profession itself. The Mandela Foundation Report on education in rural South Africa eloquently sets out parental and community views (often critical) on teachers. In the United States the debate around teacher quality has become increasingly public and political. Two interrelated processes seem to drive this. First, in many countries, a better educated populace is becoming increasingly concerned about the quality of schooling provided for their children. Second, in all parts of the world, parents are becoming increasingly aware of the significance of education to their children’s chances in the burgeoning knowledge economy. It seems inevitable that the yardstick by which teacher quality is judged will become increasingly demanding. This process is happening in respect of other professions (in the health service, for example). The norms and standards which define a teaching profession for the twenty-first century will need to be responsive to this wider circle of stakeholders.

Appendix 1

Teacher supply and retention in England

Vacancies

For the purpose of data collection in annual surveys, teacher vacancies refer to posts for at least one term that have been advertised and not filled. Vacancy rates express the number of vacancies as a proportion of the total FTE number of teachers.

Vacancy rates are regularly used as an indicator of the adequacy of teacher supply against demand, though there are concerns that vacancy figures may not present a complete or accurate picture. For example, OFSTED (2002) noted that:

... the statistics on their own mask the complexity of issues faced by schools and LEAs. The figures do not include vacancies that schools may have been forced to fill on a temporary basis nor do they indicate the quality of those appointed to vacant posts. Evidence collected as part of the inspection indicates that difficulties in recruiting good-quality teachers are on the increase and problems are now affecting a wide range of schools in many areas of the country, not just in London and the south.

The total number of vacancies at January 2006 was 2,200, which represents 0.6 per cent as a percentage of teachers in post (DfES, 2006a, table 8). Of these vacancies, 180 were for head teacher positions.

Vacancy data by type of school can be broken down as shown:

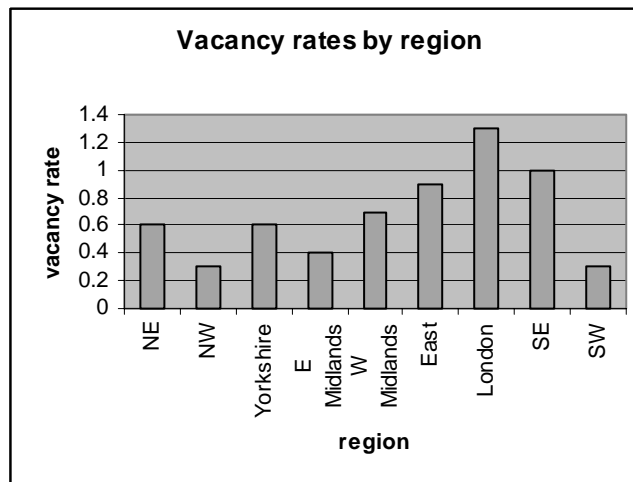
Figure 1. Vacancies by type of school, January 2006

Type of school	Nursery + primary		Secondary		Special schools		All schools	
	Number	%	Number	%	Number	%	Number	%
Classroom teacher	420	0.3	1 200	0.7	150	1.6	1 770	0.6
Assistant/deputy head	150	0.9	80	0.5	20	1.4	250	0.7
Head teacher	130	0.7	30	0.9	20	1.6	180	0.8
All vacancies	700	0.4	1 310	0.7	190	1.6	2 200	0.6

Source: DfES 2006a, table 8.

Data indicate the lowest level of vacancies in the primary sector; falling rolls in the primary phase may reduce this further. The figures indicate particular difficulty in filling posts in special schools. Although the headline figures are low overall, they hide considerable variation, both regionally and between secondary subjects. A *Guardian* survey carried out in 2001 (*Education Guardian 2001*) provided per cent vacancy rates for 152 LEAs, providing figures that varied from no vacancies to a rate of 8 per cent.

Figure 2. Vacancy rate by region, January 2006

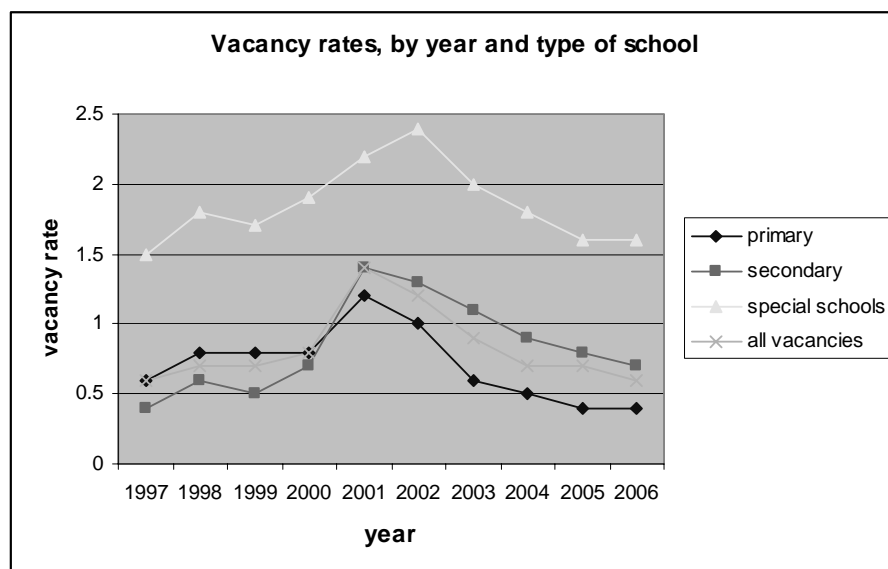


Source: DFES 2006a, table 5.

The greatest shortages are in London, although currently vacancy rates are much lower than at the peak in 2001, when the rate for London was 3.8. In a recent report for the OECD, Ross and Hutchings (2003), point out (page 33) higher vacancy rates for Inner than for outer London, and considerable variation between Inner London LEAs, highlighting variation from 1.3 per cent to 9.7 per cent between individual LEAs in 2002.

Variations in vacancy rates over the last ten years are indicated below.

Figure 3. Vacancy rate by year and type of school



Source. DFES, 2006a .

The chart shows a clear downward trend for vacancy rates in the last few years. However, the STRB note:

We welcome the continued downward trend in vacancy rates. There is, however, an absence of hard evidence on the extent to which local vacancy problems are masked by coping strategies employed by schools, and particularly the extent to which these occur in localized hotspots.

Smithers and Robinson (2000a, 2000b) provide a very detailed picture of the sorts of coping strategies adopted by head teachers, and the way in which these may hide problems in recruiting good quality, appropriately qualified teachers and in maintaining stability in staffing.

In respect of staff employed in support roles, DfES do not publish data. However, the DISS report (Blatchford et al, 2006) indicated that around a quarter of the schools surveyed had vacancies for support staff. These were most commonly for “other support staff (including mid-day supervisors, bilingual support officer, exam invigilator, etc), especially in secondary schools. However, there were also vacancies for teaching assistant posts. “Schools in areas with higher need had more recruitment and turnover problems, and more vacancies” (page 11).

Teachers leaving the profession

Both the DFES and the National Employers’ Organization for Local Government (e.g. NEOST, 2004) collect annual data on teacher resignations. Differences in definitions and data collection methods mean that the statistics produced can show considerable differences, although revealing similar trends (see, for example, Smithers and Robinson 2003, page 39).

Resignations data do not indicate the level of loss from the profession, but of the level of teacher turnover, which incorporates not only wastage (movement out of employment in the maintained sector) but also what Smithers and Robinson (2005a) have called “moveage”, i.e. teacher movement between schools. DfES headline wastage figures include teachers moving from full-time into part-time employment. The Organization data only refers to full-time permanent contracts.

The chart below shows DfES teacher wastage figures for teachers leaving the profession between 31 March 01 and 31 March 04, as a percentage of teachers in post (FTE). The figures presented here do not include movement from full-time to part-time employment (10,470), but do include those moving into the post-compulsory sector.

Figure 4. Teachers leaving the profession

Teacher wastage	Full-time	Part-time	Full-time and part-time
2001-02	10.3	25.9	9.0
2002-03	10.5	26.4	9.4
2003-04	10.6	23.8	9.2

Source: DfES, 2006c, table C1b.

The 9.2 per cent wastage in 03/04 corresponds to 39560 (28,190 full-time and 11,370 part-time) teachers leaving the classroom. Of these, one-quarter (2.3 per cent of the workforce) were to retirement, the rest (6.9 per cent of the workforce) moved out of service for other reasons.

The table below shows March 2004 wastage data by phase/type of school.

Figure 5. Teachers leaving the profession by type of school

Percentages	Nursery + primary	Secondary	Special schools + PRU	All teachers
Out of service	7.1%	6.9%	5.4%	6.9%
Retirement	2.1%	2.4%	2.5%	2.3%
Total	9.3%	9.3%	7.9%	9.2%

Calculated from DfES 2006c, tables C1b and D1.

DfES data does not record wastage by grade of employment. However retirement data is available by grade, and is summarized in the table below.

Figure 6. Teachers retiring 2003/4

Retirement March 2004	Premature/actuarially reduced		Age		Ill-health		Total
Leadership ¹	1 320	54%	930	38%	180	7%	2 440
Classroom teachers	4 920	36%	7 700	56%	1 210	9%	13 830
Others	1 340	44%	1 190	39%	530	17%	3 060
Total	7 580	39%	9 830	51%	1 930	10%	19 330

¹ Leadership includes head teacher and deputy/assistant head positions. The data includes those teachers in independent schools and further and higher education who are covered by the teacher's pension scheme.

DfES Source: Database of Teacher Records and Pensioner Statistical System (PENSTATS).

Source: DfES, 2006c, table H2.

As mentioned above, the figures indicate a high proportion of teachers retiring early, which is possible under the pension arrangements for teachers.

A Eurydice report summarizes the retirement arrangements for teachers in England as shown in the box below.

Although the official age of retirement is 65 years, the normal retirement age in [The Teachers' Pension scheme], for both men and women is 60 (although this is changing), but it is possible to work beyond 60 and claim benefits on leaving pensionable employment. Retirement benefits can be paid before age 60 for those who become permanently incapacitated due to ill health or are aged 50 or over if the employer certifies that the teacher's contract has been terminated through redundancy or as a result of reorganization leading to greater efficiency. Also, those who leave pensionable or excluded employment on or after 30 March 2000 and who are aged 55 or over, have the option of applying for actuarially reduced retirement benefits. The scheme also provides death and family benefits.

Changes were introduced to the early retirement arrangements for teachers in 1997, when employers became responsible for the extra cost of teachers' premature retirement. The 1997 arrangements introduced the option of 'stepping down' as an alternative to early retirement. Under this option, teachers aged at least 50 who no longer want the responsibilities of their current post can move to a lower paid post without a detrimental effect on their pensions. This option was introduced to provide an effective way of retaining the skills and experience of senior staff within the teaching profession.

Source: Eurydice 2006, section 8.2.16.1. Pre school, primary- and secondary school teachers.

The NASWT, giving evidence to a commons select committee in 2005 said that;

Around one in four of all teacher retirements under the Teachers' Pension Scheme in recent years involve the payment of a pension before normal pension age, with an appropriate actuarial reduction. In fact, according to statistics from Teachers' Pensions, the number of voluntary "early" retirements has almost doubled – from 15.5 per cent of all TPS retirements in 2001-02 to 28.1 per cent in 2004-05 – while only 1 per cent of retirements involve teachers working beyond the age of 65. The NASUWT believes it is unlikely that this will change in the foreseeable future and it is difficult to envisage any form of incentive system that would be likely to reverse the trend.

A review of teachers' pension arrangements is currently under consultation (DfES, 2006d). A key element of proposed changes to the arrangements is to try to retain the experience and expertise of long-serving teachers by providing flexible arrangements which make it possible for teacher to access some of their pension benefits from the age of 55 without having to retire completely.

Giving teachers the opportunity to wind down towards retirement by gradually reducing the number of hours worked and/or the level of responsibility undertaken is a key aim of this proposal. We recognize that the traditional approach to retirement, where an individual goes from being in full-time employment to being in full-time retirement over the space of a weekend, no longer meets the needs and expectations of many people and their employers. More and more teachers are looking at ways in which they can have greater control over how, and the timescale in which, they move into final retirement. (DfES, 2006b, page 13)

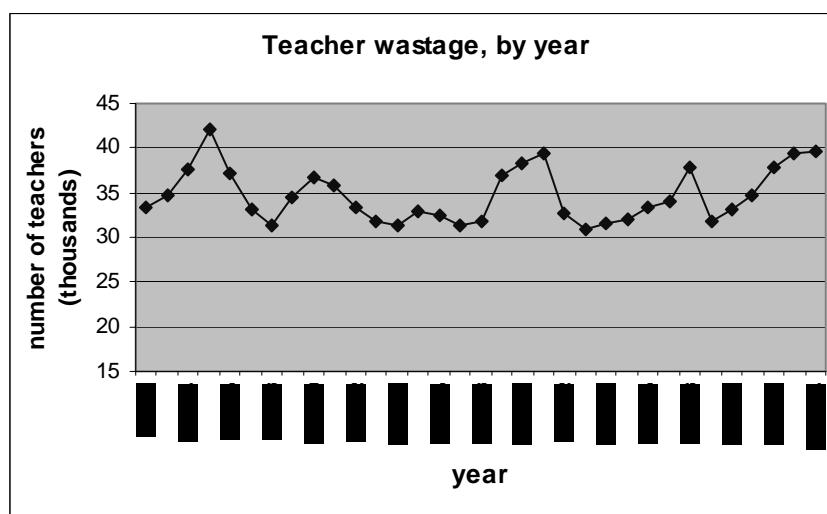
The percentage of early retirements is particularly high for those in leadership posts, with only 38 per cent of retirements from leadership posts being on the basis of age, as opposed to 56 per cent for classroom teachers.

Wastage trends over recent years, see below, have shown a steady increase from a low level in 98/99, which followed a peak in 97/98 which arose as a consequence of changes in pension arrangements. The STRB (2005, section 2.42) note that:

... the number of full-time-equivalent teachers leaving the profession has increased in recent years. The main drivers of this increase are an upward trend in the number of teachers retiring and in the number of teachers moving from full to part-time working (akin to the loss of part of a full-time-equivalent teacher). The number of teachers resigning, but not retiring, from the profession has been broadly constant in recent years.

Questions remain as to whether this level of drain from the profession is too high to sustain teacher numbers in the near future.

Figure 7. Teacher wastage



Source: DfEE, Statistics on teachers, various years.

Teachers entering the profession

The percentage of teachers in percentages of teachers in post in the year 2003-04 who were new or re-entrants to the profession, broken down by phase/type of school, was as follows.

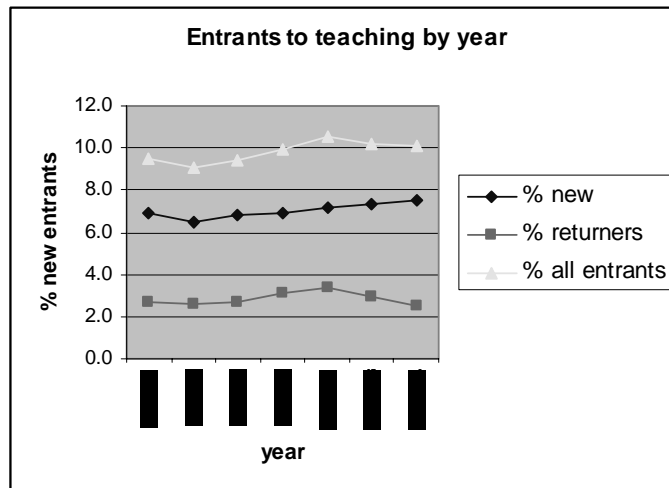
Figure 8. Entry to teaching employment

Percentages	Nursery + primary	Secondary	Special + PRU	All teachers
Newly qualified teachers	5.0%	6.0%	1.1%	5.3%
New entrants	2.3%	2.1%	2.6%	2.2%
Total new teachers	7.3%	8.1%	3.7%	7.5%
Returnees	2.6%	2.4%	2.9%	2.5%
Total	9.9%	10.5%	6.6%	10.1%

Calculated from DfES, 2006c, tables D1, C1a.

So 7.5 per cent of posts (FTE) were filled by new entrants to the profession, 5.3 per cent being newly qualified. 2.5 per cent were returning after a career break. Figures over recent years are as indicated below.

Figure 9. Entrants to teaching



Source: DFES, 2006c, tables C1c and D1.

There seems to have been a slight gradual increase in the proportion of posts filled by newly qualified teachers in the last few years, presumably linked to the increased numbers in initial teacher training, and some slight variation in the percentage of posts taken by returnees – but overall entry to teaching over the last few years seems to have been at around the 10 per cent level. In March 2004 new entry thus exceeded wastage, but maintaining teacher numbers as additional teachers retire over the next ten years may require high levels of entry, whether by new entrants or an increased level of return from the pool of inactive teachers.

Characteristics of new entrants

The age profile of newly qualified entrants to the profession for 2003-044 was as indicated in the chart below.

Figure 10. New entrants to teaching, age profile



Source: DFES, 2006c, table B5.

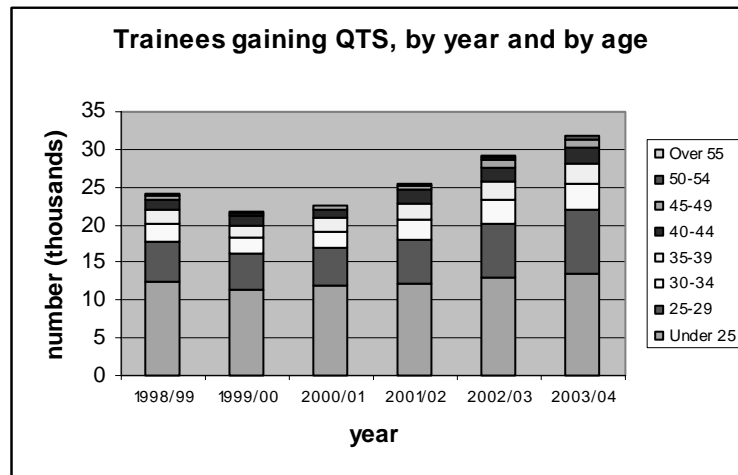
Of the newly qualified teachers entering employment, 54 per cent were aged 25 or over, with 25 per cent of the total aged 30 or above.

The General Teaching Council for England data for 2005 (GTCE, 2006) indicated that, of newly qualified teachers registered with the GTCE, one-third were aged 24 or less; 31 per cent were aged 25 to 29, and 35 per cent were aged 30 or more. The GTCE report notes that “the majority of

NQTs had spent time in other careers or activities before training as teachers” (page 5). The STRB (2005, section 2.40) note that they welcomed “increase in the number of career changers entering the teaching profession, currently making up more than 30 per cent of all new entrants to training, bringing their diverse experience to the role”.

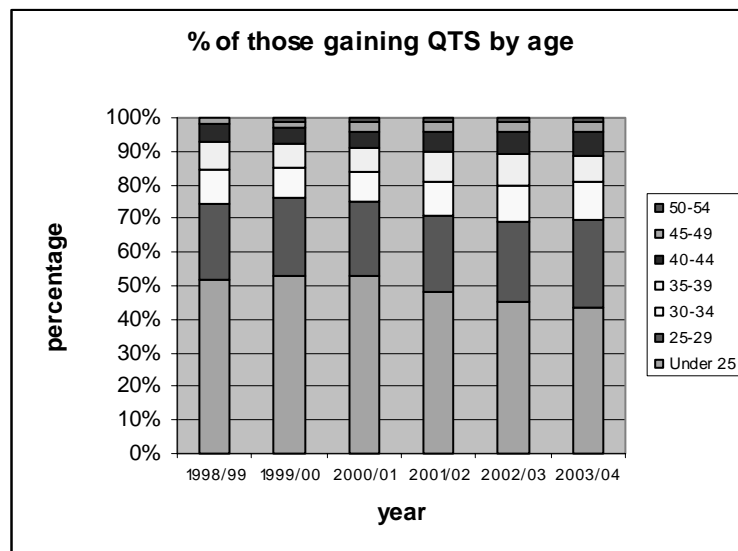
From TDA profiles data for those successfully completing training over the last few years, the numbers by age, and the percentage age distributions are as shown below.

Figure 11. Numbers gaining QTS by age and by year



Source: TDA profiles, 2006.

Figure 12. Age distribution, newly qualified teachers (including employment-based routes)



Source: TDA profiles, 2006.

This data shows a clear trend over the last half decade. Overall numbers gaining QTS have increased, with the percentage of those qualifying in the under 25 age bracket declining at the expense of older entrants, many of whom are training on employment-based routes. DfES data (2006c) indicates that in 2004-05 there were 7,460 teachers training on employment-based routes (including the overseas teacher programme), and 34,520 recruited onto courses of initial teacher training: employment-based routes thus accounted for nearly 18 per cent of those in training. Smithers and Robinson’s analysis of the 2005 TDA profiles (Smithers and Robinson, 2005b) points to the significance of employment-based routes in changing not only the age profile but also attracting more males and ethnic minority recruits. They also point to the contribution which these trainees bring to recruitment to mathematics teaching (page 2).

The percentage of men entering primary-teacher training has remained roughly the same since 1998, with around 13 per cent of trainees being male (p8); primary teaching remains a highly feminised profession in England. Male entry to secondary training, which had dipped to 36 per cent in 2002 has crept back up to 40 per cent in 2005. There has been a gradual year-on-year increase in the percentage of trainees from minority ethnic backgrounds, up to 10 per cent in secondary in 2005.

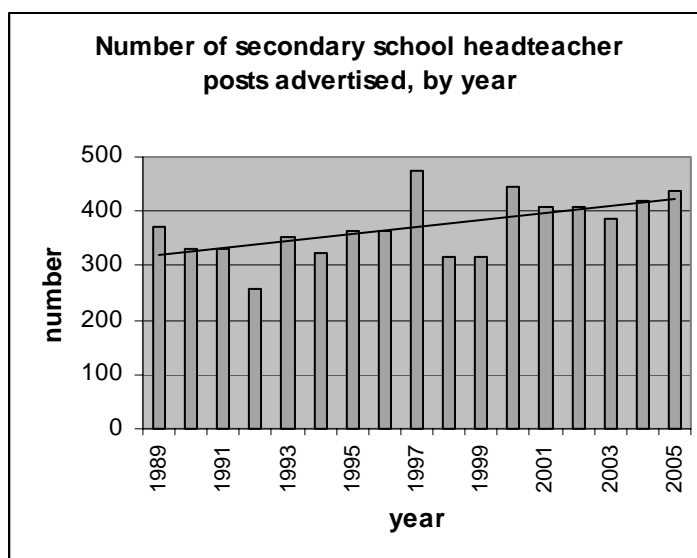
Head teachers

Information on head teacher appointments can be found in the National College for School Leadership report (NCSL, 2006), and in the annual surveys of senior staff appointments conducted by Education Data Surveys (e.g. Howson, 2006)

The NCSL paper states that “on average, Governors and employers will need to recruit a head teacher every seven years”, and notes that the “greying of the teaching force means that there is a high and increasing turnover of head teachers (NSCL, 2006, page 1). The recent OECD report (Ross et al., 2005) notes that, “a significant number of teachers will retire in the next decade and the cohort of teachers who will replace them, particularly in leadership positions, is relatively small”. The NCSL lists further challenges to head teacher recruitment, noting small fields of candidates for headship appointments, rapid changes and increases in complexity in the head teacher role, and the large step between deputy and head teacher roles (pages 1 and 2).

Education data surveys information shows that 2,600 headship posts were advertised across England and Wales in 2005, almost 400 above the mean figure for the past 11 years, although below the level for 2004. The challenges in headship appointments referred to in the NCSL report are clearly indicated in the ratio of re-advertisements to advertisements, which exceeded one-third in all sectors (page 1).

Figure 13. Advertised head teacher positions, secondary

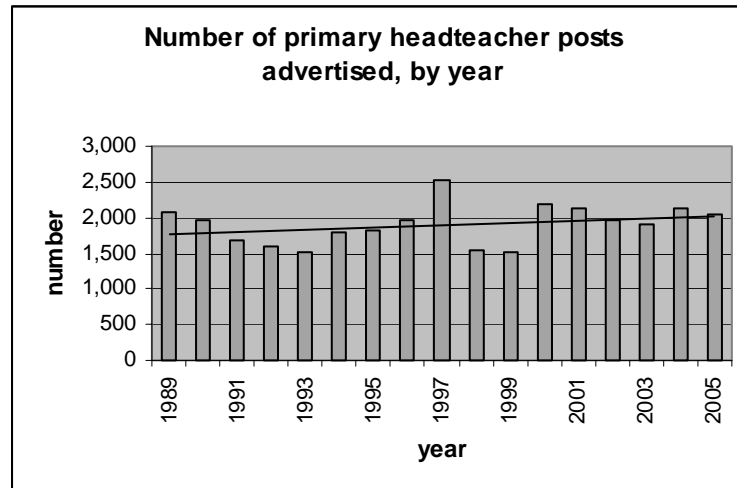


Source: Howson, 2006, table 1.

Numbers of advertisements for secondary head teacher posts have shown a clear upward trend over the last 16 years, with 11-12 per cent of secondary schools now advertising for head teachers each year. Howson suggests that the percentage is likely to remain high (page 4).

In the primary phase, the number of headships advertised has shown a gradual upwards trend – with around 10 per cent of headships advertised last year.

Figure 14. Advertised head teacher position, primary



Around 12 per cent of special schools advertised for a head teacher during 2005.

The chart below, taken from STRB 2005, indicates the age profiles for head teachers, assistant and deputy heads at March 2004.

Figure 15. Age profiles for leadership positions

The profile shows a high proportion of all three groups to be aged 50 or above, with over 60 per cent of head teachers aged over 50 years. This is of particular concern, because not only does it indicate that a very high proportion of head teachers are likely to leave the profession within the next five to ten years, but it also suggests that there is likely to be a significant loss of those teachers in senior positions who we would expect to be those who would move into headships. Serious concerns over recruitment to headships have led the Secretary of State to require a comprehensive independent study of the leadership group (to report by December 2006).

Appendix 2

General problems for teacher training identified for the High-Level Experts' Meeting on UNESCO's Teacher Training Initiative for sub-Saharan Africa

(UNESCO headquarters, Paris, 19-21 October 2005)

General problems

In the countries still tackling problems of construction or reconstruction, management and the attitude to be taken towards their inheritance, we can observe some general concerns, even though they might have been mentioned only by a single State, such as the meeting of human resources needs (Central African Republic). By transcending colonial models focused on the training of managers and administrators (Central African Republic) and rectifying the weaknesses in governance that result in enduring poverty (Ethiopia), the aim is to take action in several dimensions – strengthening of cultural and civic values, enhancement of the quality of education and of apprenticeship schemes, modernization of education and improved management of schools (Cape Verde).

This objective presupposes precise and operational diagnoses of the situation, currently under way in certain countries (e.g. Democratic Republic of the Congo), and overcoming the persistent lack of confidence in national institutions caused by insecurity (e.g. Democratic Republic of the Congo, especially in the provinces).

The countries have very large populations in need of education: 2.5 million children in Angola, 4 million children under 14 years of age not yet at school in the Democratic Republic of the Congo, while in Chad the number of children attending schools has doubled in the last ten years. The population tends to be very young (Central African Republic) with a still large proportion of illiterates (57 per cent of those over 10 years old in the Central African Republic). The problem is not confined to primary education: in the Democratic Republic of the Congo, for example, 200,000 graduates of secondary education are competing for the 25,000 places in higher education. In other words the education systems must become capable of taking in profitably students who were previously denied access since education is now regarded as a fundamental right (in Nigeria, for example, the law on the rights of the child states that every Nigerian child has the right to education).

This right, which has social, economic, political and moral implications, finds expression first of all in the need to ensure the widest possible access to primary and basic education. Certain countries, such as Cape Verde, have achieved full and equal access to primary education; others, such as Madagascar, still need to reduce disparities within the country or solve problems affecting remote populations in rural (e.g. Burundi) or mountainous (e.g. Ghana) areas or minority groups (e.g. Pygmy or Peul peoples in the Central African Republic).

The flow of new pupils (190 pupils per qualified teacher in Chad) makes it necessary to use teachers from the local community, in some cases paid by the State (Madagascar), or untrained temporary teachers recruited by parents (e.g. Congo). In the Central African Republic, for example, it is common for municipal employees or parents to teach at the primary level.

Certain measures can be introduced to improve the situation: for example, the training of primary teachers in pedagogical sections in secondary schools (Democratic Republic of the Congo) or the albeit relative job security (two-year contracts) offered to young teachers in Nigeria in exchange for teaching in rural areas.

Although access to primary education remains the priority, greater access to the other levels also needs to be provided.

This can apply to pre-school education, and several countries are giving it serious consideration (e.g. Burundi) but only a few, such as Cape Verde, are actively engaged.

It applies above all to secondary education. At that level, however, access is limited by the lack of qualified teachers (in Chad, for example, there is on average one teacher per 97 pupils). Here too regional difference can be considerable, especially in areas far from the capital, with the

widespread use of under qualified teachers in remote areas (e.g. Democratic Republic of the Congo) or numerous unfilled posts (e.g. Ghana). The conclusion drawn by Cape Verde holds for most of the other countries too: the increased numbers acceding to secondary education is not accompanied by improvements in the qualification of teachers.

The lack of science (e.g. in Ghana) and technology teachers (e.g. Congo) is particularly striking and, in an attempt to solve the problem, non-teachers are sometimes called in (e.g. use of health professionals to teach biology in the Central African Republic).

The consequences of these recruitment difficulties are complicated almost everywhere by the lack of textbooks (e.g. Cape Verde) but also by the lack of professionalism (e.g. Democratic Republic of the Congo). Every country feels the need for logistic support for existing facilities (e.g. Congo).

All the countries are fully conscious of their needs in terms of access and equity, less repetition of years, more school buildings (e.g. Madagascar). This raises the same question again and again: is it possible to find African solutions or must countries continue to appeal to the north for help? In some exceptional cases, the creation of funds to promote education, which would help to mobilize national resources, is being considered (e.g. Democratic Republic of the Congo).

The teachers

As was stated by the representatives of the United Republic of Tanzania, all aspects of the situation of teachers need to be covered.

It should be remembered that the difficulties of education in many countries have resulted in the use of many different categories of teachers with a variety of statuses. In Chad, for example, there are five categories of teachers: government employees trained in special schools, replacement teachers with a wide range of qualifications, contractual teachers, volunteers and persons recruited from the local community. These categories are treated differently in terms of pay, integration and protection, they differ in the duration and specialization of the training they have received and they have very different professional approaches – yet they are all doing the same job. This further complicates the attempts to improve or generalize teacher training. The answer is clearly to take action aimed specifically at each type of teacher without neglecting the need to clarify or even unify the different types of status.

The wide range of difficulties in the daily lives of teachers came up repeatedly. Generally speaking, these include the deterioration in living conditions (e.g. Burundi), salary problems (e.g. Zambia), no qualifications (affecting 70 per cent of primary teachers in Angola, for example), poor preparation (e.g. 62 per cent of primary teachers in Chad are recruited in the local community), or the non-recognition of their training in the case of students trained as civil servants but subsequently employed as temporary teachers (e.g. Congo). There was also the fragile health situation of teachers, especially in regard to AIDS: for example, 26 per cent of teachers in the Central African Republic who die appear to be victims of AIDS and, in 2004, 1,036 teachers in Zambia died of the disease.

To solve these problems a variety of measures, in the course of implementation or envisaged, were mentioned. These include an increase in the number of teachers (e.g. the Nigerian plan for education estimates that 3,000 new teachers will be needed each year), financial incentives (e.g. a “chalk allowance”, amounting to about 30 per cent of the salary in Madagascar) especially for those teaching in poverty-stricken regions (e.g. Ghana), provision or construction of housing, a long-established practice revived in several countries, and, of a different nature, skills upgrading campaigns (e.g. in Angola) and the use of mutual help networks among secondary teachers (in Ghana, for example).

The status, career prospects and salary, but also the posting and evaluation system were all mentioned as essential aspects of the revitalization of the teaching profession. Certain countries, as Cape Verde did with determination and realism in 2004, have revised and consolidated the specific status of teachers, an approach that implies the definition of a career development plan (introduced in Cape Verde and envisaged in other countries such as Burundi) or the introduction of a specific salary scale for teachers. The posting of teachers can only be improved on the basis of clearly defined criteria (e.g. Cape Verde) and an effective school zoning map. As for the necessary improvement of teacher evaluation, this is sometimes linked to the development of pedagogical support and supervision (e.g. Cape Verde), sometimes divided between an administrative and a

pedagogical evaluation (e.g. Chad), sometimes carried out by fellow teachers (e.g. Ghana) or, in most countries, by inspectors, annually or six-monthly (as in Cape Verde). But this raises the question of the training of the evaluators; at the very highest level, the training of chief inspectors (e.g. Chad) is still carried out abroad, outside the subregion.

The question of training is not overlooked: as Minister Charles Ossebi of Congo put it, "How can you expect untrained staff to serve as trainers?"

The situation of teacher training

Teacher training is unanimously regarded as the responsibility of governments, which are well aware of its multiplier effect (e.g. Congo) and of the need to strengthen the specialist institutions.

Here are a few figures: 4,095 teachers trained each year in Zambia as against a requirement of 6,768; 6,000 persons being trained over three years in Guinea. This above all raises the problem of recruitment for the teaching career.

In many countries the recruitment criteria and course structure differ according to the training institution concerned (in Guinea, for example), while there is no control over teacher flows: there is no record of the evaluations of qualified teachers, of the number leaving the profession, retiring or dying (e.g. in the Central African Republic). Nor is there any more control over the selection criteria for candidates. Countries are thus faced with the unpromising situation of students unable to get into a university falling back on teaching (e.g. Burundi).

Depending on the country, and sometimes within a given country, there exist various types of teacher training institutions: teacher training colleges, special classes in secondary schools, schools of education independent of the universities, faculties of education, secondary school teacher education colleges independent of or integrated into universities and awarding university or non-university diplomas, and public institutions of an administrative nature (e.g. Niger, where the former teacher training colleges now fall into this category). This list is not exhaustive; sometimes we find training systems actually competing with each other (e.g. in Democratic Republic of the Congo). These different categories obviously reflect differences in operation, type of management and status.

Mention was made of some original approaches in certain countries: *Ecoles Normales Supérieures* (ENS) functioning as part of the university but offering different specialist disciplines (e.g. in Madagascar), establishment of special teacher training institutions for the sciences (e.g. in Chad), development of distance teacher education (in Guinea, Nigeria, Namibia and Cape Verde, for example). Some countries have successfully shortened their training courses (e.g. Guinea). Attempts are being made to introduce new methods of teaching such as a skills-centred approach, teaching by objectives (e.g. Madagascar) or the introduction of a new career-centred training system (e.g. in Angola, where its effects will be evaluated in 2010 and 2015), for the question repeatedly arises of the relationship between coursework and the practical side of teacher training (e.g. in Niger), an issue all too often settled by division of the course into theoretical instruction and poorly organized practice teaching. As for the in-service training of teachers, the idea of regarding the school as the basic unit (e.g. in Niger, where the training of 227 educational advisers should help) deserves to be explored.

Attention was also drawn to the lack of flexibility in the training structures: certain subjects for which recruitment is irregular should probably be suspended in certain years, but training in them continues in the hope that the State will end up by recruiting the necessary staff (e.g. Central African Republic, among others).

As at other levels of education, there is a common shortage of professional trainers: for example, the ENS at Bangui has only seven permanent staff out of 123. In the opinion of Angola, this raises everywhere the question of the training of national teacher educators.

Here we find once again the key role of higher education in the provision of trained personnel and trainers (e.g. Congo), chiefly through the organization on the spot of training courses at the post-graduate or doctorate level (very recently in Burundi and Madagascar and, with the UNESCO Chair in the Educational Sciences for central Africa, in Congo, Democratic Republic of the Congo and Chad). This training is carried out locally since training abroad, especially in countries far away, is costly and encourages the brain drain and the non-reimbursement of fellowships (e.g. Cape Verde). The much-needed upgrading of training within the country requires the mobilization of national professionals in support of public universities (e.g. Cape Verde).

However, there are still few academic trainers and they are getting older. There is a shortage of teachers at the master's level (e.g. in Congo) and in some cases their number is even falling (in Burundi, for example, where 55 per cent of the teachers are junior lecturers, foreign aid personnel left for home in 1993 and nationals either remained abroad or changed profession). This raises the problem of the "next generation" (in Madagascar, for example, where the average age of teachers in higher education is 53, much lower than in other countries such as Democratic Republic of the Congo), which is bizarrely compounded by a freeze on recruitment.

We therefore observe a shortage of budgeted posts in higher education which is sometimes disguised by the need for teachers to do overtime because of their low salaries (e.g. in Madagascar), even though they are given some support in the form of research allowances (amounting to some 40 per cent of the salary in Madagascar), bonuses and assistance with housing (e.g. in Chad).

One of the main ways of consolidating higher education is, of course, like in the other sectors of education, the introduction of a realistic academic career plan (Democratic Republic of the Congo). Frequent mention was made (by Congo and Chad among others) of the role of the Higher Education Council for Africa and Madagascar (CAMES) and the problems posed by the accreditation to supervise research. There was also reference to the need for in-service training, but no budget line to finance it (e.g. in Burundi). Such training is often made the responsibility of an existing (e.g. in Burkina Faso) university department of education.

Higher education, even when on a small scale, has already been affected by many changes, which have not been evaluated (e.g. Burundi). It is currently faced with serious complex problems concerning new policies (in Nigeria, for example, with the role of the Open University) in a climate of internationalization (with the licence, master, doctorate (LMD) structure in Madagascar, for example, which it is hoped will be somewhat simplified) and consideration of the real costs, which in some cases leads a country to abandon the tradition of free education in public universities.

All these issues reveal the need for a coordination of the functions and operation of higher education structures (Cape Verde).

The need for rapid action

In general, the Initiative has revealed a very strong demand for the definition and implementation of actions to improve the situation, training and effectiveness of teachers. To satisfy this demand, the Minister Charles Ossebi argued that it should be more than a simple initiative: it should be regarded directly, here and now, as a plan or strategy of action.

Appendix 3

Summary of critical evaluation of literature on the recruitment and retention of teachers in the United States

This literature review provides a summary and critical evaluation of the recent published research on the topic of teacher recruitment and retention. We reviewed studies that examined: (1) the characteristics of individuals who enter teaching; (2) the characteristics of individuals who remain in teaching; (3) the external characteristics of schools and districts that affect recruitment and retention; (4) compensation policies that affect recruitment and retention; (5) pre-service policies that affect recruitment and retention; and (6) in-service policies that affect recruitment and retention.

The reviewed research offered several consistent findings. The strongest results were those relating to the influence of various factors on attrition due to the widespread availability of longitudinal data sets that track the employment of teachers. Below, we summarize the findings that emerged in the recent empirical research literature.

1. Results that arose fairly consistently regarding the characteristics of individuals who enter the teaching profession were as follows:
 - females formed greater proportions of new teachers than males;
 - whites formed greater proportions of new teachers than minorities, although there is evidence that minority participation rose in the early 1990s;
 - college graduates with higher measured academic ability were less likely to enter teaching than were other college graduates. It is possible, however, that these differences were driven by the measured ability of elementary school teachers, who represent the majority of teachers;
 - a more tentative finding based on a small number of weaker studies is that an altruistic desire to serve society is one of the primary motivations for pursuing teaching.
2. Several findings emerged with a strong degree of consistency in empirical studies of the characteristics of individuals who leave the teaching profession:
 - the highest turnover and attrition rates seen for teachers occurred in their first years of teaching and after many years of teaching when they were near retirement, those producing a U-shaped pattern of attrition with respect to age or experience;
 - minority teachers tended to have lower attrition rates than white teachers;
 - teachers in the fields of science and mathematics were more likely to leave teaching than teachers in other fields;
 - teachers with higher measured academic ability (as measured by test scores) were more likely to leave teaching;
 - female teachers typically had higher attrition rates than male teachers.
3. Regarding the external characteristics of schools and districts that are related to teacher recruitment and retention rates, the empirical literature provided the following fairly consistent findings:
 - schools with higher proportions of minority, low-income, and low-performing students tended to have higher attrition rates;
 - in most studies, urban school districts had higher attrition rates than suburban and rural districts;
 - teacher retention was generally found to be higher in public schools than in private schools.
4. The following statements summarize the consistent research findings regarding compensation policies and their relationship to teacher recruitment and retention:

-
- higher salaries were associated with lower teacher attrition;
 - teachers were responsive to salaries outside their districts and their profession;
 - in surveys of teachers, self-reported dissatisfaction with salary was associated with higher attrition and decreased commitment to teaching.
5. Rigorous empirical studies of the impact of pre-service policies on teacher recruitment and retention were sparse. In general, few results emerged across studies, and the following findings were therefore not particularly robust:
- graduates of non-traditional and alternative teacher education programs appear to have higher rates of retention in teaching than national comparison groups and may differ from traditional recruits in their background characteristics;
 - there was tentative evidence that streamlined routes to credentialing provide more incentive to enter teaching than monetary rewards;
 - pre-service testing requirements may adversely affect the entry of minority candidates into teaching.
6. Findings from the research on in-service policies that affect teacher recruitment and retention were as follows:
- schools that provided mentoring and induction programs, particularly those related to collegial support, had lower rates of turnover among beginning teachers;
 - schools that provided teachers with more autonomy and administrative support had lower levels of teacher attrition and migration;
 - a tentative finding was that accountability policies might lead to increased attrition in low-performing schools.

The entry, mobility, and attrition patterns summarized above indicate that teachers exhibit preferences for higher salaries, better working conditions, and greater intrinsic rewards and tend to move to other teaching positions or to jobs or activities outside teaching that offer these characteristics when possible. In particular, the finding that higher compensation is associated with increased retention is well established. These findings lend support to the theory outlined in our conceptual framework that the recruitment and retention of teachers depends on the attractiveness of the teaching profession relative to the alternative opportunities available. The relative attractiveness of teaching depends on the notion of relative “total compensation” – a comparison of all rewards stemming from teaching, extrinsic and intrinsic, with the rewards of other possible activities that could be pursued.

It is evident that urban schools and schools with high percentages of minority students are difficult to staff and that teachers tend to leave these schools when more attractive opportunities present themselves. It is also evident, however, that factors that can be altered through policy can have an impact on the decisions of individuals to enter teaching and on the decisions of teachers to migrate to other schools or quit teaching. The research findings support the notion that individual schools and districts can affect their attractiveness to current and prospective teachers relative to other opportunities available to these individuals. The research also offers information on the effectiveness of a number of options in the areas of compensation, pre-service policies, and in-service policies, although rigorous research evaluating pre-service policies is relatively scarce.

Reliable and up to date information on the labour market for teachers is vital to monitoring trends and averting movements toward a shortage in a productive and pre-emptive manner; our literature review highlights the absence of recent data on key indicators and the need for increased and improved data collection efforts. In particular, there is a noticeable lack of rigorous policy evaluation research. In addition to updated and more complete national and state data on the movements of teachers, more reliable data tied to specific policy interventions are needed. Although the education literature abounds with articles and reports describing or advocating particular policies, very few of them contain empirical data and analysis, and even fewer contain analysis conducted in accordance with rigorous research quality standards. We believe that policy goals at every institutional or governmental level – school, district, state, and federal – would be well served by committing the resources needed to ensure rigorous evaluations whenever new policies are established. In the end, this will be a cost-effective means of answering many questions currently unanswered in the research literature. Researchers have, for the most part, been fairly thorough in investigating issues relating to recruitment and retention when data are available. Answering the

pressing questions regarding the recruitment and retention of effective teachers will require new quantitative and qualitative research efforts based on improved data collection, the further application of theoretical and methodological rigor to the study of teacher labour markets, the further subjection of labour-market theory to empirical testing at the state and local levels, and a commitment on the part of policymakers at all levels to provide support for useful evaluation research when new policies are implemented. Further evidence is needed regarding issues of teacher recruitment and retention and the impact of specific policies (C.M. Guarino, L. Santibanez and G.A. Daley (2006): "Teacher recruitment and retention: A review of the recent empirical literature" in *Review of Educational Research*, 76(2), pp. 173-208).

Appendix 4

Extract from *The Professional Profile of a Ugandan Primary-School Teacher*

Sub-subtask: Classroom management

Elements	Unsatisfactory	Basic	Proficient	Excellent
<p>Time management <i>This involves punctuality, setting good pace and developing time management skills among pupils.</i></p>	<p>Rarely budgets time for different activities and has problems with keeping time. Generally unable to cover content within the allocated period. Makes no effort to encourage pupils to use clocks/watches.</p>	<p>Attempts to budget his/her time according to duration of activity. Tries to be punctual but is unable to cover content within allocated period. Encourages pupils to use clocks for time management.</p>	<p>Budgets time according to duration of activity and is generally punctual. Covers most content within allocated period. Encourages pupils to use wall clocks and to keep time.</p>	<p>Budgets time according to duration of activity. Is always punctual and covers content within allocated period. Deliberately instils in pupils the sense of time by using wall clocks, watches, responding to bells. Encourages parents to instil in pupils the value of time management.</p>
<p>Discipline: Rules, regulations, sanctions and rewards <i>This involves interpretation of rules and regulations, taking independent decisions, knowing and being able to choose appropriate disciplinary actions to take, making pupils aware of rules, helping pupils avoid problems.</i></p>	<p>Has a carefree attitude towards discipline. Finds difficulty in disciplining pupils. Not considerate while disciplining pupils. Does not involve pupils in formulating school rules.</p>	<p>Able to enforce basic school rules and able to discipline pupils in class although with some difficulty in some cases. Limited involvement of pupils in formulating school rules.</p>	<p>Knows the school rules well. Knows which action to take to discipline a pupil and does it objectively. Mindful of the welfare of the pupil when taking disciplinary action. Has effective control of the class.</p>	<p>Understands and interprets schools rules correctly. Distributes copies of school rules to parents and pupils. Takes independent decision and knows appropriate disciplinary action to take. Involves pupils and parents in formulating and implementing rules. Keeps records of all disciplinary cases.</p>

Elements	Unsatisfactory	Basic	Proficient	Excellent
Scheduling of activities <i>This involves: making class timetable, planning school activities, flexibility in scheduling activities</i>	<p>Has a timetable, but carries out activities in no definite pattern.</p>	<p>Can make a timetable for various activities in class and attempts to follow it.</p>	<p>Able to timetable different activities and quite flexible in adjusting the timetable for different activities.</p>	<p>Flexible in scheduling class activities and can anticipate difficulties in doing so.</p> <p>Follows timetable all the time and makes it known to pupils and parents.</p> <p>Encourages pupils to schedule their activities.</p>
Organizing instructional materials <i>This involves distributing relevant and appropriate materials to pupils, categorizing, storing and caring for them.</i>	<p>Issues out insufficient materials to pupils, and rarely encourages pupils to take responsibilities of the materials.</p> <p>Leaves materials unattended to and has no definite storage for the materials.</p> <p>Makes no effort to economize the use of the materials.</p>	<p>Attempts to issue sufficient materials to pupils, but is uncertain how to involve pupils in taking responsibility for the materials.</p> <p>Tries to store materials according to specific categories.</p> <p>Not very economical with the materials.</p>	<p>Issues enough materials to pupils.</p> <p>Generally ensures that materials are categorized and stored safely.</p> <p>Ensures easy access to the materials.</p> <p>Economical with the use of the materials.</p>	<p>Issues out enough materials to pupils, and assigns pupils to take responsibility.</p> <p>Involves pupils in categorizing and ensuring safe storage of materials.</p> <p>Ensures that pupils have easy access to the materials.</p> <p>Uses the materials judiciously.</p>
Identifying students learning needs <i>This involves knowing pupils' abilities, usefulness of group work for different activities, clear understanding of different teaching methods.</i>	<p>Groups pupils with no specific aim, may waste a lot of time during grouping of pupils.</p> <p>Group activities are not well focused.</p>	<p>Makes effort to group pupils with an aim to achieve.</p> <p>Minimizes on time wastage during grouping of pupils.</p>	<p>Groups pupils according to learning tasks.</p> <p>Deploys some strategies in forming groups although s/he may be uncertain of the effectiveness of the group work.</p> <p>Attends to some groups.</p>	<p>Knows his/her pupils and groups them according to learning tasks and their abilities. Takes advantage of more able pupils to help group members.</p> <p>Anticipates the usefulness of group work and uses orderly and fast methods of grouping pupils.</p> <p>Actively encourages pupils to work in groups. Attends to all groups and ensures that the group activities are well focused.</p>

References

- Aguti, J. 2006. *New models of teacher education and training: Responding to the crisis of conflict in Uganda*, paper presented to the AERA, San Francisco.
- Bennett, R. 2001. Om'num: a research initiative proposing strategies for quality, collaborative online teaching and learning, in *Education, Communication and Information*, Vol. 1, Issue 1, p. 103; <http://www.open.ac.uk/eci/omnum/omniset.html>.
- Bennett, P. 2005. *Teacher mortality in sub-Saharan Africa: An update*, Knowledge and Skills for Development, Brighton.
- Blatchford, P.; Bassett, P.; Brown, P.; Martin, C.; Russell, A.; Webster, R.; Haywood, N. 2006. *The deployment and impact of support staff in schools report on findings from a national questionnaire survey of schools, support staff and teachers (Strand 1, Wave 1, 2004)*, Institute of Education, University of London (DfES Research Report 776); <http://www.dfes.gov.uk/research/data/uploadfiles/RR776.pdf>, accessed 1 July 2006.
- Boler, T. 2003. *Approaches to examining the impact of HIV/AIDS on teachers*, Policy and Research Series/Save the Children and Action Aid International.
- Bruner, J. 1996. *The culture of education*, Cambridge, MA, Harvard University Press.
- CAPSSA. 2006 (forthcoming). *An analytical survey of costing and planning teacher education in sub-Saharan Africa*.
- Colclough, C.; Al-Samarrai, S.; Rose, P.; Tembon, M. 2003. *Achieving schooling for all in Africa*, Ashgate, Aldershot.
- Commission for Africa. 2005. *Our common interest*, www.commissionforafrica.org.
- Darling-Hammond, L. 1984. *Beyond the commission reports: The coming crisis in teaching*, Santa Monica, CA, Rand Corporation.
- Dembélé, M.; Bé-Rammaj Miaro II. 2003. *Pedagogical renewal and teacher development in sub-Saharan Africa: A thematic synthesis*, Association for the Development of Education in Africa Biennial Meeting, 2003.
- Devereux, J.; Amos, S. 2005. "A learner-centred teacher development programme: Initial findings on the impact of the University of Fort Hare's Distance Education Programme", in *Open Learning*, Vol. 20.
- DfES. 2006a. *Statistics of education school workforce in England (including pupil:teacher ratios and pupil:adult ratios)*, Jan. 2006 (provisional); <http://www.dfes.gov.uk/rsgateway/DB/SFR/s000653/SFR18-2006.pdf> (27 Apr, 2006), accessed 1 July 2006.
- . 2006b. *Qualified teachers in schools in England in January each year* (Jan. 2006); <http://www.dfes.gov.uk/rsgateway/DB/TIM/m002006/ts-qualteach.pdf>, accessed 1 July 2006.
- . 2006c. *Statistics of education: School workforce in England (including teachers' pay for England and Wales) 2005 edition*, Internet version (26 Jan. 2006), <http://www.dfes.gov.uk/rsgateway/DB/VOL/v000633/index.shtml>, accessed 1 July 2006.

-
- . 2006d. *First class, adaptable, sustainable: teachers' pension scheme England and Wales*, DfES publications, Nottingham, and online at: http://www.teachernet.gov.uk/_doc/9790/TPS%20England%20and%20Wales.pdf, accessed 21 July 2006.
- Dladla, N.; Moon, B. 2006. *Why teachers matter: The challenge of teacher supply and teacher development in sub-Saharan Africa*, symposium presentation to the American Educational Research Association annual conference, San Francisco, Apr. 2006.
- Dzimbo, P.; Barasa, F. 2006. *Creating Pan-African models of teacher education: Repositioning the role of the African Virtual University*, paper presented to the AERA, San Francisco.
- Eddy Spicer, D.; Huang, J. 2001. "Of gurus and godfathers: Learning design in the networked age", in *Education, Communication and Information*, Vol. 1, Issue 3, pp. 325-358.
- Education in Labour Relations Council. 2005. *The health of our educators: A focus on HIV/AIDS in South African public schools*, Cape Town.
- Eurydice Database on Education. 2006. The information database on education systems in Europe, the education system in the United Kingdom (England, Wales and Northern Ireland), 2004-05, <http://194.78.211.243/Eurybase/Application/frameset.asp?country=UK&language=VO>, accessed 20 July 2006.
- Frederickson, U. 2004. *Quality education: The key role of teachers*, Education International Working Paper No. 14.
- Global Campaign for Education. 2006. *Teachers for all: What governments and donors should do*.
- Global Campaign for Education/Action Aid. 2005. *Contradicting commitments: How the achievement of EFA is being undermined by the IMF*, London, Action Aid.
- General Teaching Council for England. 2005. *Annual digest of statistics*, GTCE, London, also accessed online on 1 July 2006 at: http://www.gtce.org.uk/shared/contentlibs/126785/93118/digest_of_statistics_0506.pdf.
- Guarino, C.M.; Santibanez, L.; Daley, G.A. 2006. "Teacher recruitment and retention: A review of the recent empirical literature", in *Review of Educational Research*, 76(2), pp. 173-208.
- Hafner, A.; Owings, J. 1991. *Careers in teaching: Following members of the high-school class of 1972 in and out of teaching*, NCES Report No. 91-470, Washington DC, United States Department of Education, National Center for Education Statistics.
- Henke, R.; Chen, X.; Geis, S. 2000. *Progress through the pipeline: 1992-93 college graduates and elementary/secondary school teaching as of 1997*, Washington DC, National Center for Education Statistics.
- Hirsch, E.; Koppich, J.; Knapp, M. 2001. *Revisiting what States are doing to improve the quality of teaching: An update on patterns and trends*, Center for the Study of Teaching and Policy, University of Washington, Seattle.
- Howson J. 2006. *21st Annual survey of senior staff appointments in schools*, Education data surveys, Oxford; http://www.educationdatasurveys.org.uk/21st_report.pdf, accessed 3 July 2006
- Ingersoll, R. 1999. "The problem of underqualified teachers in American secondary schools", in *Educational Researcher*, 28, 26-37.

-
- Ingersoll, R.I. 2004. "Four myths about America's teacher quality problem", in Smylie, M.A. and Miretsky, D. (eds.): *Developing the teacher workforce*, Chicago, University of Chicago Press.
- Kukulska-Hulme, A.; Traxler, J. 2005. *Mobile learning: A handbook for education and trainers*, London, Routledge.
- Leach, J. 2006. *DEEP IMPACT: An investigation of the use of information and communication technologies for teacher education in the global south*, London, Department for International Development (DFID), Research the Issues Series.
- .; Moon, B. 2002 *Globalization, digital societies and school reform: Realising the potential of new technologies to enhance the knowledge, understanding and dignity of teachers*, 2nd European Conference on Information Technologies in Education and Citizenship: A Critical Insight, Barcelona.
- Lewin, K.M. 2002. "The costs of supply and demand for teacher education dilemmas for development", in *International Journal of Educational Development*, 22(3-4), pp. 221-42.
- Macdonald, D. 1999. "Teacher attrition: a review of literature", in *Teaching and Teacher Education*, 15:8, pp. 835-48.
- McGreal, C. (2005) "Young teachers are dying", in *The Guardian*, 20 Dec., p. 5.
- Melaney, P. 2000. *The impact of HIV/AIDS on the education sector in Southern Africa*, CAER II Discussion Paper No. 81, Cambridge, MA, Harvard Institute for International Development.
- Mhando, E. 2006. *A note on teacher status in Tanzania. First meeting of the national coordinators of UNESCO's Teaching Training Initiative for sub-Saharan Africa*, UNESCO, Paris.
- Minges, M. 2004. *African telecommunications indicators 2004*, International Telecommunications Union.
- Moon, B. 1996. "Practical experience in teacher education: Charting a European agenda", in *European Journal of Teacher Education*, 19:3, pp. 217-260.
- . 2000. "The open learning environment: A new paradigm for international developments in teacher education" in Moon, B.; Brown, S.; Ben-Peretz, M.: *The Routledge International Companion to Education*, London, Routledge.
- . 2003. "A retrospective review of the national case studies on institutional approaches to teacher education" in Moon, B.; Vlasceanu, L.; Barrows, L.C. (eds.): *Institutional approaches to teacher education within higher education in Europe: Current models and new developments*, Bucharest, UNESCO.
- . with Vlasceanu, L.; Barrows, L.C. 2003. *Institutional approaches to teacher education within higher education in Europe: Current models and new developments*, Bucharest, UNESCO.
- . Leach, J.; Stevens, P. 2006. *Designing open and distance learning for teacher education in sub-Saharan Africa. A toolkit for educators and planners*, Washington, World Bank.
- Morris, P.; Williamson, J. 2000. *Teacher education in the Asia-Pacific region. A comparative study*, New York and London, Falmer Press.

-
- Nadeosa. 2005. *Designing and delivering distance education. Quality criteria and case studies for South Africa*, Pretoria, SAIDE.
- National Academic of Sciences. 1987. *Toward understanding teacher supply and demand*, Washington, DC, National Academy Press.
- National Commission on Excellence in Education. 1983. *A nation at risk: The imperative for educational reform*, Washington, DC, Government Printing Office.
- NCSL. 2006. "Leading appointments: A study into and guidance on head teacher appointments", <http://www.ncsl.org.uk/media/C7F/6D/randd-headteacher-recruitment-interim-report.pdf>, accessed 1 July 2006.
- Nelson Mandela Foundation. (2004. *Emerging voices*, Cape Town, HSRC Press.
- Nilsson. 2003.
- NEOST. 2004. Survey of Teacher Resignations and Recruitment Report No 35, Dec. 2004, National Employers' Organization.
- NTI. 2003. *Teacher education at a distance: Impact on community development: A research report*, Kaduna.
- OECD/UNESCO. 2001. *Teachers for tomorrow's schools*, Paris.
- OFSTED. 2002. *Recruitment and retention of teachers and headteachers: Strategies adopted by LEAs*, e-publication HMI 709, <https://www.ofsted.gov.uk/publications/index.cfm?fuseaction=pubs.displayfile&id=2601&type=pdf>.
- . 2005b. *An employment based route into teaching*, London, OFSTED.
- Remy, J.P. 2002. *Des préservatifs de tres mauvaises qualité modes L'Afrique de L'Est Le Monde*, 15 June, p. 1.
- Report of the Commission for Africa. 2005. *Our common interest*, London, Commission for Africa.
- Ross, A.; Hutchings, M. 2003. *Attracting, developing and retaining effective teachers in the United Kingdom of Great Britain and Northern Ireland: OECD country background report*, Institute for Policy Studies in Education, London.
- SAIDE. 1995. *Teacher education offered at a distance in South Africa*, Pretoria, SAIDE.
- Sali-i-Martin, X. 2002. *The world distribution of income estimated from individual country distributions*, National Bureau of Economic Research Working Paper No. 8933, Cambridge, MA, May 2002, 31.
- Shretha, P. 2005. *Lessons from the classrooms; A policy research report on teacher motivations and perceptions in Nepal*, Kathmandu, VSO, Nepal.
- Smithers, A; Robinson, P. 2005a. *Teacher turnover, wastage and movements between schools*, Centre for Education and Employment Research DfES Research Report 640 <http://www.dfes.gov.uk/research/data/uploadfiles/RR640.pdf>, accessed 9 July 2006.
- . 2005b. *Teacher training profiles 2005*, Buckingham, CEER, <http://www.buck.ac.uk/education/research/ceer/pdfs/teachertraining2005.pdf>, accessed 24 July 2006.

-
- . 2003. *Factors affecting teachers' decisions to leave the profession*, Research Report 430, London, DfES.
- . 2000a. *Coping with teacher shortages*, Centre for Educational and Employment Research, University of Liverpool
- . 2000b. *Talking heads*, Centre for Educational and Employment Research, University of Liverpool
- Soloway, E.; Norris, C.; Blumenfeld, P.; Fishman, B. Krajcik, J.; Marx, R. 2001. *Log on education: Handheld devices are ready-at-hand*, communications of the ACM, 44(6), 15-20.
- Somekh, B. 2001. *The role of evaluation in ensuring excellence in communications and information technology initiatives, education, communication and information*, Vol. 1, Issue 1 pp. 75-101.
- South African Department of Education. 2005. *A national framework for teacher education in South Africa*, Pretoria.
- STRB. 2005. Fifteenth Report – 2005 Crown Copyright, HMSO, Norwich, [http://www.ome.uk.com/downloads/STRB per cent2015 per cent20report.pdf](http://www.ome.uk.com/downloads/STRB%20per%20cent2015%20report.pdf), accessed 9 July 2006.
- TDA. 2005. *Performance profiles*, <http://profiles.tta.gov.uk/index.htm>, accessed July 2006.
- Transparency International. 2006. *Global Corruption Report 2006* (available at www.transparency.org).
- UNESCO. 2000. *Statistical document: Education for all 2000 assessment*, Paris.
- . 2006. *Teachers and educational quality: Monitoring global needs for 2015*, Montreal, UNESCO Institute for Statistics.
- Villegar-Reimer. 2001. *Teacher professional development: A review of the literature*, Paris, UNESCO.