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# **Managing Teacher Costs for Access and Quality**

**Santosh Mehrotra  
Peter Buckland**

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## Table of contents

Executive summary .....	i
Précis .....	iv
Síntesis de acción .....	viii
INTRODUCTION .....	1
SOME PROPOSITIONS .....	3
Teacher real incomes can be, and often are, reduced .....	3
Teacher salaries are not the same as teacher costs .....	3
Public expenditure on teacher costs is often supplemented by private contributions .....	3
The use of teacher aides or classroom assistants can reduce unit costs of teaching .....	3
TEACHER REMUNERATION LEVELS 1980 - 1995 .....	3
Changes in Real Wages of Teachers 1985 - 1995 .....	5
Teachers' Salaries and GDP per Capita, by Region .....	6
Average Teacher Salaries and Literacy Rates .....	7
Teacher Salaries and Pupil-Teacher Ratios .....	9
Teacher Salaries and Teacher Qualifications .....	10
Average Teacher Salaries Compared with Other Occupations .....	10
Average Teacher Salaries by Gender .....	11
Teachers Salaries and the Market .....	11
STRATEGIES TO MANAGE TEACHER COSTS .....	12
Changing the Salary Structure .....	12
Improving Teacher Utilisation .....	14
Unqualified Teachers, Teachers in Training, Teacher Aides and Volunteers .....	16
SOME LESSONS .....	19
REFERENCES .....	37

## List of tables

Table 1:	Changes in Teachers' Real Wages 1985 - 1995 .....	5
Table 2 :	Average Salaries and Multiple of GDP per Capita, by Region .....	6
Table 3:	Salary/GDP per capita adjusted for literacy levels .....	8
Appendix A (i)		
	Additional Teachers Needed to Reach NER 100: 3 Scenarios based on varying pupil-teacher ratios .....	21
Appendix A (ii)		
	Additional Teachers Needed to Reach GER 100: 3 Scenarios based on varying pupil-teacher Ratios. ....	24
Appendix B(i)		
	Trends in Teacher salaries, 1983-95 (base 100:1989-91 average) .....	28
Appendix B (ii)		
	Real Teacher Wage .....	30
Appendix C		
	Teacher Salaries in Dollars (Most recent years) .....	31
Appendix D		
	Ratio of Average Salary to GDP per Capita, by region .....	34
Appendix 'E'		
	Salary/GDP per capita adjusted for literacy .....	35
Appendix F		
	Primary teacher salaries as a ratio of selected public administration employees .....	36

## **Executive summary**

1. Some 120-140 million children in developing countries are out of school. Assuming a pupil-teacher ratio of 30, some 4 million new teachers are needed to reach Net Enrolment Rate (NER) of 100. This challenge underlies the argument of the paper. The challenge is most significant in South Asia and Sub-Saharan Africa (SSA). These two regions account for nearly two-thirds of the additional teachers needed to reach Universal Primary Education.
2. In industrialized countries teacher salaries account for around 80% of recurrent expenditure at the primary level. In developing countries that share is even higher. The issue of teacher salaries poses a conundrum, especially in many least developed countries. Teachers cost too much to the state, but in many developing countries, they earn too little, forcing them to supplement their income, or live below the poverty line. This paper tries to address the issue of managing teacher costs, while still ensuring access and quality.
3. The paper rests on a number of propositions. Although governments take the position that teacher salaries cannot be reduced, in fact teacher real incomes have been reduced in many countries. The paper analyses changes in real wages of teachers over the 1980s and early 1990s, and teacher salaries as compared to income per capita. It goes on to compare average teacher salaries to trends in pupil-teacher ratios and also trends in teacher qualifications. It further compares average teacher salaries with other occupations in public administration.
4. For the 11 SSA countries for which data is available, salaries declined for most or remained constant in real terms. For the 15 Latin America and the Caribbean (LAC) countries that data exists, salaries declined in 10 of them (mainly Latin American countries). This is not surprising since all education expenditure was squeezed during the economic crisis of the 1980s. In both regions evidence accumulated that teachers were taking on second jobs. The ILO says that especially in Latin America and in some African countries, teacher salary cuts were deeper than those for other civil servants. For the 6 Asian countries that data exists, salaries increased in real terms.
5. As regards cross-regional or cross-country teacher salary comparisons, the ratio of teacher salaries to GDP per capita remains the usual comparator. UNESCO data for the early 1990s suggest that the ratio has not changed much from that in the 1980s. For West and Central Africa, the ratio is 7.28; for Southern and Eastern Africa 5.9; for Asia 1.84; and for LAC 1.79. The high African ratio has normally been seen as proof that teachers cost too much there.
6. This ratio is misleading as the multiple falls as income per capita rises, because education of an average income earner rises relative to teachers' education. It is more important to estimate the deviation of this ratio from a trend line of GNP per capita, rather than actual GNP per capita. Another possible basis for inter-country comparison is the ratio of teacher salary to GDP per capita relative to the literacy rate in the country. We obtain the predicted value for the ratio, given

the literacy rate. Many francophone African and a few anglophone countries still deviate from the expected trend. Only in Africa does the teacher salary level exceed the predicted ratio by a significant margin, with some exceptions.

7. Given that NERs are well below 100, and hence the need for expanding the number of teachers is considerable, the case for managing teacher costs is overwhelming. The paper discusses three sets of standard strategies for managing costs:

- Changing salary structure
- Improving teacher utilisation
- Employing teacher aides and volunteers

8. Under changing salary structure the paper briefly discusses:

- delinking teacher salaries from civil service salaries
- changing rates of progression through the scale
- delinking salaries from advanced qualifications
- incentives and supplementary allowances (housing, transport, hardship)
- merit awards and master teacher schemes

9. Under improving teacher utilisation the paper briefly discusses:

- redeployment of teachers
- increasing teacher workloads
- introducing multi-grade teaching
- improving MIS (eg. to detect 'ghost' teachers, incorrect salary payments)
- introduction of accelerated learning programmes for overage pupils

10. But it is on teacher aides, volunteers and teachers in training that we concentrate, since the other measures do not address the Challenge, according to which a very substantial increase in teacher numbers is required to achieve UPE. Changes in the salary structure and teacher utilisation are a necessary but not sufficient condition for resolving the teacher costs conundrum. The major strategies that have enabled the rapid expansion of systems have almost always involved the recruitment of unqualified or lower-qualified teachers, or the teachers in training, or teacher aides/volunteers.

11. These strategies come with a high risk of compromising quality, unless complementary strategies are put in place to address the major threats to quality. The complementary inputs increase costs, so it is possible that the end result on costs may involve only slight savings, but the cost-effectiveness might be greater. In all cases there are trade-offs involved, and there are relevant lessons to be learnt from the experience of such programmes. We discuss a number of programmes, in

most of which UNICEF has been directly involved.

12. The cases we described are driven by the same need to manage costs, but have increased enrolment. Some lessons emerge:

- Employment of unqualified or less-qualified personnel must be accompanied by strategies to provide on-going support in the form of curriculum materials, in-service training and guidance. These bring with them attendant costs which must be taken into the calculations when estimating the cost savings in employing less-qualified teachers.
- Experience suggests that inservice programmes using a combination of distance and contact education is far more cost-effective than institutional pre-service training, if the benefits of teaching service during training are taken into account.
- Expansion of the teaching force using unqualified teachers who undergo training to become qualified can impose unaffordable cost consequences as the teachers qualify for higher salaries. Planning of such expansions should take account of this factor. Given that the correlation between female teachers and enrolment of girls is known to be high, the experience shows that increasing the number of female teachers is possible in the remotest areas, in traditional Islamic societies (eg. Bangladesh, Egypt), even in rural areas.
- Community participation has been critical in almost every initiative involving expansion of the teaching force while controlling costs. This has taken different forms eg. participation in the management of the school, or supplementing the salaries or non-salary costs of teacher aides, or relieving the state of other costs, such as school construction or teacher housing.

## Précis

1. Quelque 120 à 140 millions d'enfants ne sont pas scolarisés dans les pays en développement. En prenant pour hypothèse un rapport enseignants/élèves de 1 à 30, il faudrait recruter environ 4 millions d'enseignants supplémentaires pour atteindre un taux net de scolarisation de 100 %. Ce défi sous-tend l'argumentation développée dans le présent document. La tâche sera particulièrement ardue en Asie du Sud et en Afrique subsaharienne. Ces deux régions représentent près des deux tiers du nombre total des enseignants supplémentaires qui devront être recrutés pour assurer un accès universel à l'enseignement primaire.
2. Dans les pays industrialisés, les traitements des enseignants représentent environ 80 % des dépenses renouvelables au niveau de l'enseignement primaire. Dans les pays en développement, ce pourcentage est encore plus élevé. La question de la rémunération des enseignants constitue un dilemme, en particulier dans nombre des pays les moins avancés. Elle représente une dépense trop lourde pour l'État et pourtant, dans beaucoup de pays en développement, les enseignants gagnent très peu, ce qui les oblige à compléter leurs revenus ou à vivre en deçà du seuil de pauvreté. Le présent document tente d'apporter une solution au problème de la gestion des coûts afférents aux enseignants, tout en assurant l'accès à l'éducation et la qualité de l'enseignement.
3. Le document repose sur un certain nombre de propositions. Bien que les gouvernements partent du principe que les traitements des enseignants ne peuvent pas être réduits, les revenus réels de ces derniers ont en fait diminué dans bien des pays. On analyse les évolutions enregistrées dans ces revenus au cours des années 80 et au début des années 90 et dans les traitements par rapport au revenu par habitant. On compare ensuite les traitements moyens aux tendances observées dans les rapports élèves/enseignants et dans les qualifications des enseignants. Une comparaison est également établie entre les traitements moyens des enseignants et ceux d'autres agents de l'administration publique.
4. Dans les 11 pays d'Afrique subsaharienne pour lesquels des données sont disponibles, les traitements ont généralement diminué ou sont restés constants en valeur réelle. Dans 10 des 15 pays d'Amérique latine et des Caraïbes pour lesquels on dispose de données, ils ont régressé (dans les pays d'Amérique latine essentiellement). Cela n'est pas surprenant car les dépenses d'éducation ont été systématiquement comprimées durant la crise économique des années 80. Dans les deux régions, on a constaté que, de plus en plus souvent, les enseignants ont un deuxième emploi. L'OIT indique que, notamment en Amérique latine et dans certains pays d'Afrique, les coupes opérées dans la rémunération des enseignants étaient plus fortes que celles affectant d'autres catégories de fonctionnaires. Dans les six pays d'Asie pour lesquels il existe des données, les traitements ont augmenté en valeur réelle.
5. S'agissant des comparaisons entre les traitements des enseignants dans différentes régions ou différents pays, le rapport des traitements au PIB par habitant sert habituellement de point de

référence. Les données recueillies par l'UNESCO au début des années 90 font apparaître que ce rapport n'a guère changé depuis les années 80. Pour l'Afrique de l'Ouest et l'Afrique centrale, il est de 7,28; pour l'Afrique australe et l'Afrique de l'Est, de 5,9; pour l'Asie, de 1,84; et pour l'Amérique latine et les Caraïbes, de 1,79. Le rapport élevé enregistré en Afrique est normalement considéré comme une preuve que les enseignants coûtent trop cher dans cette région.

6. Ce rapport est toutefois trompeur lorsqu'il diminue et que le revenu par habitant augmente parallèlement, car le niveau d'instruction d'un individu moyen qui touche un revenu s'accroît par rapport à celui des enseignants. Il est plus significatif de mesurer l'écart entre ce rapport et une courbe de tendance du PNB par habitant, qu'entre ce rapport et le PNB effectif par habitant. Une autre base possible pour les comparaisons entre pays réside dans la mise en corrélation du ratio rémunération des enseignants/PIB par habitant et du taux d'alphabétisation dans le pays. On obtient une valeur prévisionnelle pour le ratio, compte tenu du taux d'alphabétisation. Pour bon nombre de pays d'Afrique francophones et quelques pays anglophones, on observe toujours un écart par rapport à la tendance escomptée. Les pays dans lesquels le niveau de la rémunération des enseignants dépasse largement le ratio prévu sont tous situés en Afrique, à quelques exceptions près.

7. Étant donné que les taux de scolarisation nets sont largement inférieurs à 100 et qu'il est donc nécessaire d'accroître considérablement le nombre des enseignants, les arguments qui militent en faveur d'une gestion des coûts afférents aux enseignants sont très convaincants. Le présent document analyse trois types de stratégies standard pour la régulation des coûts :

- Modification de la structure des traitements;
- Meilleure utilisation des enseignants;
- Recours à des auxiliaires et à des bénévoles.

8. Dans le cadre de la stratégie de modification de la structure des traitements, le document analyse brièvement les options suivantes :

- Dissociation des traitements des enseignants de ceux d'autres catégories de fonctionnaires;
- Modification des taux de progression dans le barème;
- Suppression du lien rigide entre les traitements et les qualifications;
- Introduction d'incitations et d'indemnités supplémentaires (logement, transport, sujétion);
- Introduction de primes de mérite et de régimes particuliers (maîtres principaux).

9. Dans le cadre de la stratégie de rationalisation de l'utilisation des enseignants, le document analyse brièvement les options suivantes :

- Redéploiement d'enseignants;
- Accroissement de la charge de travail des enseignants;
- Introduction du système de la classe unique;
- Amélioration des SIG (par exemple, pour détecter les enseignants "fantômes" ou les versements de traitements indus);
- Introduction de programmes d'enseignement accéléré pour les élèves ayant dépassé l'âge normal.

10. C'est sur le recours à des auxiliaires, à des bénévoles et à des enseignants en formation que nous mettons néanmoins l'accent car les autres mesures ne répondent pas directement au défi que l'on doit relever, à savoir la nécessité d'augmenter considérablement le nombre des enseignants pour assurer un enseignement primaire universel. Les modifications dans la structure des traitements et les modalités d'utilisation des enseignants constituent une condition nécessaire mais non suffisante pour résoudre le problème épineux des coûts afférents aux enseignants. Les principales stratégies qui ont permis l'expansion rapide des systèmes reposaient presque toujours sur le recrutement d'enseignants non qualifiés ou sous-qualifiés, d'enseignants en formation ou d'auxiliaires bénévoles.

11. Ces stratégies risquent fort de nuire à la qualité de l'enseignement si l'on ne prévoit pas des mesures complémentaires pour conjurer cette menace. Comme ces mesures complémentaires entraînent un accroissement des coûts, il est possible que les économies réalisées soient finalement modestes mais le rapport coût-efficacité sera peut-être amélioré. En tout état de cause, il y a des compromis à accepter et des leçons utiles à tirer de l'expérience acquise dans le cadre de tels programmes. Nous évoquons un certain nombre de programmes à la plupart desquels l'UNICEF a été directement associé.

12. Les cas que nous avons exposés sont inspirés par la même nécessité de gérer les coûts mais ils ont permis d'augmenter les taux de scolarisation. Quelques enseignements s'en dégagent :

- Le recours à du personnel non qualifié ou sous-qualifié doit aller de pair avec des stratégies de soutien consistant par exemple à fournir des outils pédagogiques et des conseils et à assurer une formation en cours d'emploi. Elles génèrent des dépenses qui doivent entrer dans les calculs lorsqu'on évalue les économies liées à l'emploi d'enseignants sous-qualifiés.

- L'expérience montre qu'il est financièrement beaucoup plus avantageux d'organiser une formation en cours d'emploi en combinant le téléenseignement et l'enseignement direct que d'assurer une formation préalable dans une institution, compte tenu des avantages qui résultent des services offerts par les enseignants durant la formation.
- La stratégie qui consiste à élargir le corps enseignant en faisant appel à des enseignants non qualifiés qui suivent une formation pour acquérir les compétences voulues risque d'avoir des incidences financières inacceptables dans la mesure où les intéressés peuvent prétendre à des rémunérations plus élevées. Les plans d'expansion des effectifs devraient tenir compte de ce facteur. On connaît par ailleurs la corrélation étroite qui existe entre la présence d'enseignants de sexe féminin et le taux de scolarisation des filles et l'expérience montre qu'il est possible d'accroître leur nombre dans les zones les plus reculées, dans des sociétés islamiques traditionnelles (au Bangladesh ou en Égypte, par exemple), même en milieu rural.
- En général, la participation des collectivités jouait un rôle essentiel dans les initiatives qui visaient à élargir le corps enseignant tout en maîtrisant les coûts. Elle revêtait différentes formes, par exemple, participation à la gestion des établissements scolaires, versement de compléments pour financer les traitements des auxiliaires ou les dépenses non salariales connexes, ou prise en charge d'autres dépenses à la place de l'État, telles que les dépenses liées à la construction d'écoles ou au logement des enseignants.

## Síntesis de acción

1. En los países en desarrollo hay unos 120 a 140 millones de niños que no asisten a la escuela. Suponiendo una relación de 30 alumnos por maestro, se requieren unos cuatro millones de maestros más para alcanzar la tasa neta de matrícula escolar de 100. Ese es el problema acuciante que se aborda en el presente documento. La dificultad es más notable aún en el Asia meridional y el África al sur del Sáhara ya que en esas dos regiones se requiere alrededor de dos tercios de los maestros adicionales necesarios para lograr la enseñanza primaria universal.
2. En los países industrializados los sueldos de los maestros representan alrededor del 80% de los gastos periódicos en la enseñanza primaria. En los países en desarrollo el porcentaje es aún mayor. La cuestión de los sueldos de los maestros es un problema complejo, especialmente en muchos países menos adelantados. Si bien los maestros son una carga para el Estado, en muchos países en desarrollo ganan tan poco que se ven obligados a complementar sus ingresos o a vivir por debajo del umbral de pobreza. En el presente documento se intenta abordar la cuestión de lograr que la gestión de costos de los maestros garantice al mismo tiempo el acceso a la educación y su calidad.
3. El documento se apoya en varios enunciados. Si bien los gobiernos adoptan la posición de que los sueldos de los maestros no se pueden reducir, de hecho los ingresos reales de los maestros se han reducido en muchos países. En el documento se analizan las variaciones de los sueldos reales de los maestros durante el decenio de 1980 y comienzos del de 1990, y los sueldos en comparación con los ingresos per cápita. Más adelante se comparan los sueldos medios de los maestros con las tendencias en la proporción de alumnos por maestro y en la idoneidad de los maestros. También se comparan los sueldos medios de los maestros con otras ocupaciones en la administración pública.
4. En la mayoría de los 11 países del África al sur del Sáhara sobre los cuales se dispone de datos, los sueldos disminuyeron o se mantuvieron constantes en valores reales. De los 15 países de América Latina y el Caribe sobre los cuales existen datos, los sueldos disminuyeron en 10 de ellos (fundamentalmente países de América Latina). Esto no resulta sorprendente, ya que todos los gastos de educación se redujeron durante la crisis económica del decenio de 1980. En ambas regiones hubo cada vez más casos de maestros con un segundo empleo. La Organización Internacional del Trabajo (OIT) señala que, especialmente que, especialmente en América Latina y algunos países de África, las reducciones de los sueldos de los maestros fueron mayores que en el caso de otros funcionarios públicos. En los seis países de Asia sobre los cuales existen datos, los sueldos aumentaron en valores reales.
5. En cuanto a las comparaciones de los sueldos de los maestros entre países y regiones habitualmente se sigue utilizando como punto de referencia la relación entre los sueldos de los

maestros y el producto interno bruto (PIB) per cápita. Los datos de la Organización de las Naciones Unidas para la Educación, la Ciencia y la Cultura (UNESCO) relativos a los primeros años del decenio de 1990 indican que la relación no ha cambiado mucho con respecto a la del decenio de 1980. En el África occidental y central asciende a 7,28; en el África meridional y oriental, a 5,9; en Asia, a 1,84; y en América Latina y el Caribe, a 1,79. La relación alta que existe en África se ha interpretado normalmente como prueba de que el costo de los maestros es allí demasiado elevado.

6. Esa relación es engañosa, ya que el múltiplo disminuye al aumentar los ingresos per cápita, dado que la educación de un asalariado medio aumenta en forma directamente proporcional a la de los maestros. Es más importante calcular la desviación de esa relación a partir de una curva del producto nacional bruto (PNB) per cápita que del PNB per cápita real. Otra posible base para las comparaciones entre países es la relación de los sueldos de los maestros con el PNB per cápita con referencia a la tasa de alfabetización del país. Dada la tasa de alfabetización, se obtiene el valor previsto de la relación. Muchos países africanos de habla francesa y algunos de habla inglesa aún se desvían de la tendencia esperada. Solamente en África el nivel de sueldos de los maestros excede de la relación prevista en un margen significativo, con algunas excepciones.

7. Habida cuenta de que las tasas netas de matrícula escolar están muy por debajo de 100 y de que, por lo tanto, es indispensable aumentar el número de maestros, los argumentos en favor de la gestión de costos de los maestros resultan abrumadores. En el documento se analizan tres grupos de estrategias estándar para la gestión de costos:

- Modificar la estructura de sueldos
- Mejorar la utilización de los maestros
- Emplear voluntarios y auxiliares docentes

8. En relación con la modificación de la estructura de sueldos, se analizan brevemente las siguientes medidas:

- Desvincular los sueldos de los maestros de los sueldos de la administración pública
- Modificar las tasas de progresión a lo largo de la escala
- Desvincular los sueldos de los puestos de mayor especialización
- Otorgar incentivos y prestaciones complementarias (vivienda, transporte, condiciones difíciles)
- Establecer planes de gratificaciones por desempeño meritorio y para maestros más

capacitados

En relación con el mejoramiento de la utilización de los maestros, se analizan brevemente las siguientes medidas:

- Redistribuir a los maestros
- Aumentar el volumen de trabajo de los maestros
- Introducir la enseñanza en varios grados
- Mejorar el sistema de información administrativa (por ejemplo, para detectar maestros ficticios o el pago incorrecto de sueldos)
- Introducir programas de aprendizaje acelerado para alumnos con retraso escolar

Sin embargo, se hace hincapié en el empleo de auxiliares docentes, voluntarios y estudiantes de institutos pedagógicos, ya que las demás medidas no resuelven el problema que plantea la necesidad de aumentar considerablemente el número de maestros para lograr la enseñanza primaria universal. Las variaciones de la estructura de sueldos y la utilización de los maestros son factores necesarios pero no suficientes para resolver el problema complejo del costo de los maestros. Las principales estrategias que han permitido ampliar rápidamente los sistemas casi siempre han entrañado la contratación de maestros no diplomados o escasamente idóneos, estudiantes de institutos pedagógicos, voluntarios o auxiliares docentes.

Esas estrategias pueden poner en peligro la calidad de la enseñanza, a menos que se pongan en práctica estrategias complementarias para hacer frente a los principales factores que puedan afectarla. Los insumos complementarios aumentan los costos, de manera que es posible que el resultado final en cuanto a los costos entrañe sólo economías leves, aunque la eficiencia en función de los costos puede ser mayor. En todos los casos hay ventajas y desventajas y hay importantes lecciones que aprender de la experiencia de esos programas. En el documento se analizan diversos programas, en la mayoría de los cuales el UNICEF ha participado directamente.

Los casos que se describen responden a la misma necesidad de controlar los costos y han dado lugar al aumento de la matrícula escolar. De ellos se derivan las siguientes conclusiones:

- El empleo de personal no diplomado o poco idóneo debe ir acompañado de estrategias que presten apoyo constante en forma de materiales para los programas de estudio y orientación y capacitación en el servicio. Ello entraña costos concomitantes que deben incluirse en los cálculos al estimar las economías que supone el empleo de maestros menos preparados.

- De la experiencia se desprende que los programas de formación en el servicio en que se utiliza una combinación de educación a distancia y directa son mucho más eficaces en función de los costos que la formación institucional antes del empleo, si se toman en cuenta los beneficios del servicio docente durante la formación.
- La ampliación del personal docente con maestros no diplomados que reciben capacitación para obtener un diploma puede entrañar consecuencias imposibles de costear, ya que los maestros tienen derecho a recibir sueldos más altos. Al planificar ese tipo de ampliación se debe tomar en consideración ese factor. Habida cuenta de que se sabe que hay una correlación elevada entre el número de maestras y la matrícula escolar de las niñas, la experiencia ha demostrado que es posible aumentar el número de maestras en las zonas más remotas, en las sociedades islámicas tradicionales (por ejemplo, en Bangladesh y Egipto), e incluso en las zonas rurales.
- La participación de la comunidad ha sido decisiva en casi todas las iniciativas encaminadas a ampliar el personal docente y al mismo tiempo controlar los costos. Ha adoptado distintas formas, por ejemplo, la participación en la administración de las escuelas, en el complemento de los sueldos o los costos no relacionados con los sueldos de los auxiliares docentes, o en relevar al Estado de otros costos, como la construcción de escuelas o la vivienda para los maestros.

## **INTRODUCTION**

Teacher costs constitute up to 90 per cent of the public costs of primary education in most developing countries. Increasing access and improving quality to achieve the EFA goals will require not only a greater allocation of public expenditure to basic education in many countries, but also a series of measures which reduce the average teacher cost per pupil without negatively impacting on teacher motivation.

This paper starts from an analysis of teacher remuneration levels across countries to identify the important trends which could influence access and quality. It then goes on to discuss a range of cost-effective strategies which have been employed by the state in developing countries to increase teacher numbers, improve teacher training and support, improve teacher performance and motivation, promote more equitable distribution of teachers and address gender inequities. The paper then examines a range of community responses to teacher shortage, and identifies some of the critical factors which influence their effectiveness. It concludes with an analysis of the main lessons learned to inform the development of individual country strategies to manage teacher costs to improve access and quality.

## **THE CHALLENGE**

Estimates of the global teacher requirements to reach Universal Primary Education (UPE) vary substantially depending on the methodology used, and the assumptions which underpin the calculations. Appendix A(i) & (ii) provides a table with calculations based on the following assumptions. First, the number of additional teachers required to achieve an NER of 100 in each country is calculated using the pupil:teacher ratios currently existing in the country. Second, this amount is adjusted using a pupil:teacher ratio of 40:1, and again of 30:1. The same calculations are made to estimate the additional teachers required to achieve a GER of 100. Then the number of additional teachers in each category is presented as a percentage of the number of teachers presently in employment. The calculation does not take account of population growth but simply estimates the current teacher shortage. The following points emerge:

- In order to reach a target pupil-teacher ratio of 30 and NER of 100, the number of teachers needed in Latin America and the Caribbean, Sub-Saharan Africa, Middle East and North Africa, South Asia, East Asia and the Pacific, and Central Asia and Eastern Europe would be about 4 million.
- India, Pakistan and Bangladesh suffer from severe shortages of teachers.
- In Sub-Saharan Africa, the countries in francophone Africa requiring the largest number of teachers are: Benin, Burkina Faso, Burundi, Cameroon, Guinea, Madagascar, Niger, Senegal and Zaire.

- In anglophone Africa, the countries most severely short of teachers are: Ethiopia, Kenya, Malawi, and Tanzania. In Somalia and Mozambique as well the numbers of teachers needed is very large indeed.

These calculations reflect an ideal which is very unlikely to be attainable in many Sub-Saharan African countries in the near future. At present teacher costs, virtually none of the countries referred to above could afford to expand the teaching force on the scale implied. From a child rights perspective, the exclusion of any children from access to quality basic education is unacceptable, and all the countries have committed themselves to achieving universal primary education. While some of the countries could increase the level of public expenditure for primary education substantially, many already commit a relatively high percentage of public expenditure to education.

Personnel costs constitute by far the largest single component of public expenditure on education, ranging from 57 per cent to around 87 per cent of the total. Figures for primary education are often above 90%, particularly in Africa where per capita expenditure on primary education has been relatively low, and has in many cases declined in real terms recently.

The issue of teacher costs was explored extensively in the mid to late 1980s (at a seminar in 1987), leading to the publication of the most comprehensive work on the subject in 1993, the World Bank's *Teachers in Developing Countries: Improving Effectiveness and Managing Costs* (Farrell & Oliveira, 1993). While there have been several studies on the subject of teacher costs since then, notably the work by Carnoy and colleagues, the focus of much of the work over the last decade has been on the other components of recurrent costs, such as textbooks and teaching and learning materials.

Attempts to restructure systems to achieve real progress towards access to quality basic education for all have often focused on strategies to reduce, shift or supplement the costs of these other elements of education expenditure, such as construction costs, textbooks and materials. Examples of serious attempts by governments to reduce teacher costs are much more rare among reform initiatives, on the basis that *"you cannot reduce teachers' salaries"*. However, the reality has been that both in Africa and Latin America the 1980s and 1990s witnessed a general lowering of real incomes of teachers, with very rapid and substantial reductions in some cases.

A fundamental problem which emerged from the decade of the 1990s regarding teachers' salaries is summed up by the conundrum expressed by a delegate at the recent ADEA workshop<sup>1</sup>: *"Teachers cost too much and earn too little"*. The speaker recognised that high teacher costs were placing an unbearable burden on the state even where the level of teacher remuneration was so low that teachers were forced to supplement their incomes through other work, or had real incomes below the poverty line. Unless strategies can be developed which address this central

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<sup>1</sup> Association for the Development of Education in Africa (ADEA) Working Group on Education Financing and Financial Management Workshop, 12 - 14 October, Dakar Senegal.

problem, many countries, especially in Africa, hold out little hope of achieving quality education for all, even within another decade or more.

## **SOME PROPOSITIONS**

In an attempt to take this argument a little further, it may be helpful to identify a number of propositions on which the paper rests:

### **Teacher real incomes can be, and often are, reduced**

Contrary to the argument that teachers salaries cannot be reduced, there is clear evidence that teachers' real incomes have often been substantially reduced even where their nominal value has remained stable or increased.

### **Teacher salaries are not the same as teacher costs**

While the politics of reducing the nominal value of teacher salaries might prove to present an insuperable challenge, it must be recognised that substantial savings in teacher costs can and have been achieved through improved teacher utilisation, more efficient teacher deployment and increasing teacher productivity. A second strategy is to reduce average qualification levels so that a greater proportion of teachers are on a lower point in the salary scale. Reducing teacher costs does not necessarily imply reducing teacher salaries.

### **Public expenditure on teacher costs is often supplemented by private contributions**

There are numerous examples of situations where parents and communities have raised resources to supplement (or even substitute) the state's contribution to teacher costs through direct or indirect subsidies to state employed teachers, or through direct employment of privately paid teachers.

### **The use of teacher aides or classroom assistants can reduce unit costs of teaching**

This paper describes a number of initiatives where persons have been employed in capacities other than teacher to supplement the teaching resources and increase the cost effectiveness of expenditure on teachers.

## **TEACHER REMUNERATION LEVELS 1980 - 1995**

The comparison of teacher remuneration levels between different countries presents numerous theoretical and practical problems, and is further complicated by the dearth of good data. The most comprehensive data on teacher remuneration in developing countries is published by the ILO, and this analysis draws heavily on that database. However, even this source has a high

proportion of data gaps so that extended systematic comparisons are rarely possible, and one is forced to focus on trends reflected in the data. The data which was gleaned for this study is presented below in a series of tables, with some of the implications or trends suggested by the data identified under each table.

### Changes in Real Wages of Teachers 1985 - 1995

The Table below is abstracted from Appendix B which gives the real wages for 29 countries in selected years between 1983 and 1995. This table includes data only on those countries for which there is comparable data for both 1985 and 1995.

<b>Table One: Changes in Teachers' Real Wages 1985 - 1995</b>					
<b>Country</b>	<b>Note</b>	<b>1985</b>	<b>1989-91</b>	<b>1995</b>	<b>Change</b>
Honduras		40	100	113	+183,0%
Republic of Korea	1	74	100	149	+101,0%
Thailand	1	77	100	133	+72,7%
Bangladesh	2	116	100	191	+64,6%
Mauritius		101	100	131	+29,7%
Romania		86	100	103	+19,8%
Cyprus		100	100	105	+5,0%
Belize		199	100	142	-28,6%
Bahrain	1	154	100	100	-35,1%
Argentina		84	100	43	-48,8%
Barbados		197	100	91	-53,8%

Note 1: 1994 data for 1995; Note 2: 1984 data for 1985. Source: Appendix B

On the basis of Table One and the figures in Appendix B, the following observations can be made:

- In the decade 1985 - 1995 there were substantial fluctuations in average real wages paid to teachers in many countries, with some average real wages increasing by over 180%, while in other countries average real wages decreased by over 50%.
- In the 29 developing countries for which the ILO database has comparable data, average real wages for teachers increased substantially in 10 countries, decreased substantially in 10 countries and fluctuated in both directions in another 4 countries. Only in 5 of the reported countries did the average real wage remain relatively constant.
- In the Asian countries for which data is available, real teacher salaries have increased slightly.

- Rapid declines in primary teachers’ real salaries generally materialised in both Africa and Latin America.

### Teachers’ Salaries and GDP per Capita, by Region

Carnoy and Welmond (1996) provide the most comprehensive recent analysis of teachers’ salaries in developing countries and their data provides a basis for comparison between regions, reflected in the Table below:

<b>Table 2 : Average Salaries and Multiple of GDP per Capita, by Region</b>	
<b>Region</b>	<b>Average salary/ GDP per capita</b>
West & Central Africa	7,28
South and Eastern Africa	5,90
Asia	1,84
Latin America	1,79

Source: Carnoy & Welmond (1996)

- It should be noted that these regional averages draw only on countries for which data was available. The full range of data is provided in Appendix D.
- The strongest trend emerging from the data is the relatively high multiple of salaries to GDP per capita in Africa, particularly in West and Central Africa, compared with Asia and Latin America.
- This suggests that average teacher salary levels are influenced more by historical and political factors than by calculations of the affordability of salary levels.

Cox Edwards made the point strongly in 1993 that simple comparisons of the relationship between average salary and per capita GNP can be misleading (Cox Edwards 1993). Teachers’ salaries relative to GNP per capita tend to fall as GNP per capita rises, primarily because the education of an average income earner rises relative to teachers’ education and the proportion of the population of labour force age also increases as countries become wealthier. Carnoy and Welmond (1996) estimate the deviations of the above ratio (average teachers’ salaries relative to GNP per capita) from a GNP per capita trend line. This deviation offers a more accurate measure of the relative value countries put on their teachers at different stages of development. Unlike the previous index, some African countries (e.g. Tanzania, Malawi, Madagascar, Kenya, and Guinea) that appeared to pay rather well relative to their GNP per capita, pay

poorly when their salaries are adjusted for the GNP trend line. However, a very large number of African countries (Rwanda, Mali, Ethiopia, Burkina Faso, Niger, Mauritania, Zimbabwe, Cote d'Ivoire, Burundi, Benin and Togo) still pay comparatively well even when adjustment is made for the trend line.

### **Average Teacher Salaries and Literacy Rates**

Another possible basis for comparing the ratio of teacher salaries to GDP per capita is to consider the level of literacy in the country, on the assumption that where literacy levels rise, the scarcity value of teachers should decline. The table below provides a summary of the data presented in Appendix E. The countries are presented by region sorted by residual: this residual is the difference between the expected ratio (teacher salary to GDP per capita when adjusted for literacy rates) and the actual ratio. In other words, if the residual is positive it means that the average teacher salary is higher than the literacy trend would predict. Conversely, if the residual is negative then the actual salary is lower than the expected. This table provides data for selected African countries only. Data on other regions is available in Appendix E:

<p style="text-align: center;"><b>Table three</b> <b>Salary/GDP per capita adjusted for literacy</b> <b>levels</b></p>
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<b>Country</b>	<b>Residual</b>
Ethiopia	8,29
Central African Republic	5,97
Mali	5,22
Zimbabwe	5,14
Rwanda	4,97
Burkina Faso	1,78
Mauritania	1,38
Burundi	1,10
Lesotho	0,82
Tanzania	0,63
Madagascar	0,57
Niger	0,50
Kenya	0,30
Togo	0,21
Chad	-0,17
Botswana	-0,88
Cote d'Ivoire	-0,98
Mauritius	-1,22
Benin	-1,25
Malawi	-1,93
Ghana	-3,56
Guinea	-4,51

- When adjusted for levels of literacy, the average salary levels show a rather different trend, but there are still countries in Africa which vary widely from the level which the level of literacy would imply.
- Many francophone countries still seem to belong to the category of those deviating

from the trend line. However, it should be noted that these calculations are for years before the CFA devaluation - since data do not permit a post-devaluation estimation. As a result, it is likely that even for the francophone countries the ratio now falls closer to the normal range.

- The data on other regions provided in Appendix E shows that only in Africa does the teacher salary level exceed the predicted ratio by a significant margin, with possible exceptions of Oman (-4,81) and Bangladesh (-2,25).

### **Teacher Salaries and Pupil-Teacher Ratios**

When the data on pupil-teacher ratios from UNESCO is compared with trends in teacher salary levels, a complex picture emerges. In Latin America where teacher salaries fell, pupil-teacher ratios tended unambiguously to fall in most countries. While some may interpret this as lowering teacher 'productivity', this needs to be interpreted in light of the actual ratios. Where ratios decline from very high levels (above 45 or 50:1), this would imply possible gains in terms of quality which could offset the increase in costs per pupil. Where ratios are reduced to levels below 30 - 35, it suggests a level of teacher utilisation which may be unaffordable in the context. A critical consideration is the enrolment level in the country. If lower pupil:teacher ratios result in an increase in the number of pupils excluded from schooling, then such a reduction would be harder to defend than in a context of very low exclusion rates.

In Sub-Saharan Africa the picture is much more mixed over the period 1980-92. In West and Central Africa, the ratio remained roughly the same - at relatively high levels - in seven countries (Cameroon, Cote d'Ivoire, Equatorial Guinea, Ghana, Mali, Niger and Sierra Leone); in eight countries it rose from already high levels (Burkina Faso, Central African Republic, Congo, Guinea, Mauritania, Nigeria, Senegal, Togo). In only two countries (Benin, Chad) did the pupil-teacher ratio fall, quite justifiably since the levels were high.

In East and Southern Africa the picture is quite different. The pupil-teacher ratio actually fell in ten (Botswana, Comoros, Ethiopia, Kenya, Madagascar, Mozambique, Somalia, Tanzania, Zambia and Zimbabwe), rose in only three (Burundi, Djibouti, and Lesotho), and remained roughly constant in six (Angola, Malawi, Mauritius, Rwanda, Swaziland and Uganda). But the education system was so under-resourced during this period that a fall in the pupil-teacher ratio does not necessarily translate into better learning when most of the other inputs are in short supply.

### **Teacher Salaries and Teacher Qualifications**

While the evidence on the relationship between teacher qualifications and quality is mixed, in most countries teacher qualifications have implications for average salary levels, in that a higher proportion of lower qualified or unqualified teachers will tend to

lower the average teacher salary. In the 1980s qualifications of those trained as teachers in many developing countries (including those that cut back on educational spending) went up, but a high proportion of new teachers appointed lacked the rising formal professional qualifications for teaching. And in another set of developing countries, the proportion of qualified teachers who were recruited fell without any increase in formal teacher qualifications (UNESCO, 1993; ILO, 1996). In Africa, in countries experiencing low and negative economic growth, academic qualifications of new teachers moved downwards. This may happen as students drop-out of higher education and into teaching, which requires less financial investment. UNESCO (1993) reported that 12 out of 16 countries studied (not all in Africa) were taking to hiring unqualified teachers.

### **Average Teacher Salaries Compared with Other Occupations**

The ILO database permits comparison of average teacher salaries with average incomes in other occupations. Appendix F presents a table with available data for selected countries. The table presents a comparison with an office clerk, firefighter, stenographer-typist, local authority official at the middle level, and central government executive official. In Latin America and the Caribbean, teachers at the first level appear to be paid only as much as office clerks and in some cases less than a firefighter. Only in such high-achievers as Uruguay and Costa Rica are teacher salaries better than those of the office clerks. In comparison with local authority or central government officials, first level teachers are much worse off.

In francophone Africa, on the other hand, the average salary of primary teachers, in comparison with other public administration officials, is better than those of office clerks and firefighters and stenographer-typists; this evidence is consistent with other evidence cited earlier. As expected, their salaries are worse than those of middle level local authority or central government officials. The number of observations is very limited in respect of Asia and the Middle East. However, in East Europe and the Baltics, where again educational indicators tend to be high, teacher salaries are better than those for office clerks and firefighters, and roughly comparable with those of stenographers, local authority and central government officials.

### **Average Teacher Salaries by Gender**

Although very few countries still have different salary scales for men and women teachers, almost all countries show a significant gap in the average earnings of women teachers compared with their male counterparts. Teacher employment policies, such as regulations governing maternity leave and continuity of service and “temporary” employment status for married women are an important factor in this differential. Also,

employment practices which serve to exclude women from responsibility posts also add to the plethora of social and cultural obstacles which confront women in the teaching profession in many countries. This suggests that simply instituting policies which require equal salary scales, while essential in terms of basic rights, will not address the very substantial problem of female under-representation in the teaching profession in the lower income countries of Sub-Saharan Africa and South Asia. (ILO 1996)

### **Teachers Salaries and the Market**

The Oliveira and Farrell study, having examined the evidence on teacher salaries within and across countries, especially developing countries, came to the conclusion that comparative analysis of teachers average salaries is of rather limited value, even when fairly sophisticated methodologies are employed. Their conclusion that “*teachers should be paid as much as is necessary to attract and maintain people with desired qualifications*” is as applicable today as it was ten years ago. (Oliveira & Farrell, 1993:16) No matter what regulatory structures are put in place, market forces influence the demand for teaching as an occupation. While the market forces do cross borders, mobility is quite limited in most cases, and quite different market conditions can exist in countries which are neighbours and have similar levels of economic development. The challenge for policy makers is not to determine from comparison with other countries that teachers are “overpaid” or “underpaid”. The value of examining salary scales in other countries is to understand the nature of the market operating in that country, and the forces which are distorting or optimising it. Perhaps the best indication that the level of teachers salaries may be higher than necessary is if there are more qualified applicants for teaching positions than there are positions available. As was the case in 1987 (Zymelman & De Stephano 1993), there are countries in Sub-Saharan Africa where this is the situation.

While market forces are a significant factor influencing teacher salaries, they are by no means the only ones. One important mechanism which influences demand is the qualification requirements for appointment to teaching posts. The phenomenon which Oliveira and Farrell (1993) describe where countries lower minimum qualifications during periods of rapid expansion, without changing the salary scale for higher qualified teachers, is still applicable today, and constitutes perhaps the most frequently used strategy for reducing average teacher costs during periods of system growth.

In the last decade there have been many examples of countries which have implemented many of the strategies for reducing teacher costs which were discussed at the 1987 World Bank seminar. In many cases the rapid expansion of the system was made affordable by such strategies, but the longer term cost implications meant that the initiative had to be prematurely ended, resulting in system with a small cadre of highly qualified and relatively well paid teachers, and a larger group of “under-qualified” and lower paid teachers. In other cases, the need to meet the salary demands of the new teachers who quickly climb the qualification ladder meant that expansion of the system

had to be slowed. In some cases, the costs in terms of quality which accompany the rapid expansion have resulted in a fall-off in demand for schooling, and a reversal of the trend to universal primary education.

## **STRATEGIES TO MANAGE TEACHER COSTS**

The overview of trends in teacher salary levels suggests that not only do average teacher salaries vary enormously from one system to another, but also they can and do change substantially over time. When teachers real salaries drop as a result of such external economic factors, this can have a devastating effect on teacher morale, with serious consequences for equity and quality, and teachers may resort to supplementing their income by charging fees for private tuition or by taking second jobs or leaving the profession altogether.

There is little that education policy makers can do to ward off such macro-economic developments beyond ensuring that the resources committed to education are expended in the most efficient, equitable and effective way. This implies close attention to managing teacher costs, rather than seeking to manipulate teacher salaries, an arena often closed to education policy makers anyway. The emphasis here is on managing teacher costs, not simply reducing them, since there may very well be instances when equity or quality may require an increase in some aspects of teacher costs. These policy choices require a careful assessment of the trade-offs involved, and there are no simple formulae. However, there is a wide range of experience which points both to the advantages and disadvantages of different policy choices to manage teacher costs. The remainder of this paper examines briefly a few examples of this experience and points to some of the lessons which emerge.

### **Changing the Salary Structure**

A range of strategies have been employed by countries to restructure teacher salary scales to enable more effective control over teacher costs. They are described briefly below:

#### *De-linking teacher salaries from civil service salaries*

Given that civil service reform is currently underway in a large number of developing countries, teacher salary reform could become tied almost entirely to civil service reform. This is one reason to consider separating teacher service commissions from public service commissions. This was a strategy strongly advocated in the 1993 study (Farrell & Oliveira 1993). There may be other reasons as well for dissociating teacher service reform from the civil service. The incentives that need to be in place for ensuring effective teaching and a highly motivated teacher force may not entirely coincide with the incentive system needed for the civil service. For instance, countries such as Japan, which have managed to provide an attractive teacher remuneration package, de-linked teacher salaries from civil service salary systems. Separating teachers' pay scales from the civil services scales, as Malawi has also done, establishes a separate teaching service and allows career ladders to be implemented more easily (Lockheed and Verspoor,

1993).

*Changing rates of progression through the scale*

Among OECD countries, the maximum salary is, as of 1990, 1.6 times higher than the minimum salary. In the UK it is 1.8, and the Netherlands reports a slightly higher ratio, viz. 2.03. For the developing countries for which there is data, the ratio varies between 1.1 and 3.8 (ILO, 1991). For developing countries, the time gap between minimum and maximum salary varies between five years in Jordan, 26 years in Panama and even extends up to the whole career (increments until retirement) in Uruguay. A key factor which will influence policy in this regard is the 1966 Recommendation (of the UNESCO-ILO Committee on the Status of Teachers) that the time gap between the minimum and the maximum of the basic salary scale should be within 10 to 15 years and salary increments should preferably be granted at annual intervals.

*De-linking salaries from advanced qualifications*

While few systems would advocate a structure which completely de-links the salary level paid from qualification level of teachers, there are significant differences in the extent to which teacher costs can be increased by teachers with more than the minimum qualification. Many developing countries have teachers' salaries based on degrees earned rather than years on the job. In Togo, for instance, new teachers holding the highest certificate earn 2.78 times more than new teachers in the lowest unqualified entry category (Zymelman and DeStefano, 1989). In Nepal the highest-ranked primary school teacher (who has two years of university training) earns about 60 per cent more than the lowest-ranked teacher (who has not gone beyond lower secondary school). In twenty of twenty-five countries studied in Sub-Saharan Africa, individuals must teach for 15 years or more to earn the maximum salary; they need far fewer years of advanced schooling to attain that same salary (Zymelman and DeStefano, 1989). South Africa has recently experimented with restructured scales which reduce the linkage between salaries and qualifications (Buckland et al 1993), although it will be some time before the impact of this policy is reflected in average teacher salaries.

*Incentives and supplementary allowances*

At a Seminar of the ADEA Working Group on Education Finance in Dakar in October 1997, countries present listed a wide range of incentives and supplementary allowances which are currently paid to teachers in some countries and not in others. Among them were housing, administration, transport and hardship allowances. In some cases the total value of the allowances paid can exceed the salary amount. One reason for this in some countries was the need for some mechanism to differentiate teacher salaries from those of other civil servants. The rigid linkage of qualification to salary notch results, in some cases, in teachers being equated with relatively low level civil servants, and additional incentives are negotiated to keep teachers in the profession. Incentives, both remunerative and non-remunerative were seen in the 1993 study as offering serious possibilities for improving teacher effectiveness. There is clearly a need for a more systematic study and exchange of information on the cost-effectiveness of the various

incentives.

#### *Merit awards*

The issue of rewards for good performance was extensively discussed in the 1993 study, and is summed up by Oliveira and Farrell's conclusion that "*individual merit pay systems ... have theoretical advantages that have not yet been found in practice.*"(1993:8) Since then a number of merit award schemes have been implemented in both developing and developed countries. The conclusion reached in 1993 is supported by most of that experience, and is summed up by Kelley (1997:17) in the argument that most of these schemes failed because they "*rewarded individual performance in an organization in which outcomes depended on team or organizational performance.*" Attention is now shifting to merit schemes which reward team or institutional performance, and while some studies of the effectiveness of this approach in USA are now becoming available (Kelley 1997), there is very little evidence of the impact of such schemes in developing countries. Delegates at the recent seminar ADEA Working Group on Education Financing (1997) agreed that in Africa, at any rate, where individual merit pay schemes had been introduced they had had a negligible impact on teacher effectiveness while adding significantly to teacher costs.

### **Improving Teacher Utilisation**

In many countries in Sub-Saharan Africa, distribution of teachers is extremely uneven. In some cases pupil:teacher ratios are very high in urban areas and low in rural areas, while in other countries the converse may be true. Frequently, because of shortage of physical facilities or simply poor management and control, actual teaching hours taught by a teacher may be less than half that prescribed by local regulation. Some management information systems are so poor that a significant number of teachers on the payroll may not be in actual service, resulting in fraud and wastage. Among the strategies employed by countries are the following:

#### *Redeployment of teachers*

A wide range of strategies have been used to achieve a more efficient and equitable distribution of teachers. Some of these have involved cash or other incentives, and this cost must be off-set against the gains achieved through increased efficiency. Other strategies, such as linking promotion prospects to rural or hardship service can have impact without such direct cost implications. Sometimes communities are willing to meet the cost of housing or accommodation incentives, and while this does not increase the teacher costs to the state, it must be assessed for its possible impact on the private costs of schooling, which can affect enrolment rates. The most recent experience of teacher re-deployment strategies are in South Africa and in Guinea (Condé, 1995).

#### *Increasing teacher workloads*

While systems normally have guidelines for workloads in terms of hours of work and sometimes in terms of pupil:teacher ratios, poor teacher deployment often results in

utilisation levels well below these levels. Re-scheduling of school hours to permit more efficient use of physical facilities can increase the actual contact hours. The 1993 World Bank study suggested supplementing teachers' salaries if they taught double sessions. One country (Botswana) at the recent ADEA workshop reported experiments with paying incentives to teachers to teach double sessions, which resulted in doubling of pupils taught with a relatively small increase in salary cost. Other countries have introduced double sessions without any compensation, and reported mixed results with regard to impact on quality and teacher morale.

#### *Introducing multi grade teaching*

The difficulty of small school size in remote rural areas has been most effectively addressed through multi-grade teaching strategies whereby one teacher teaches a number of different grades simultaneously. This has been used widely in South Africa and many other countries. As in the case with many such strategies, the significant gains in unit teaching costs can be offset by poor teacher performance since teachers rarely receive training in multi grade teaching methods. Where such training is provided, its cost can offset many of the cost savings achieved by better teacher utilisation. In such cases, teacher unit costs remain constant, but cost effectiveness can be significantly improved.

#### *Improving management information systems*

Many countries have introduced measures to improve the information management which enables the detection and elimination of "ghost" teachers and incorrect or double salary payments. While there are initial costs in introducing such systems, particularly in the capacity-building required to ensure effective utilisation and maintenance, they can usually be justified in terms of the efficiency gains from better information. The experience of the NESIS programme in several Sub-Saharan African countries demonstrates both the effectiveness of such programmes, and the time and capacity building required for effective utilisation.

#### *Introducing accelerated learning programmes for overage pupils*

Uganda is one of many countries which have experimented with the introduction of accelerated learning (COPE) for overage learners so that children can complete a six year primary programme in three to four years. The savings to the system are not in terms of reduced teacher costs, which may be higher, because of the training and support required, but are manifested in the shortened learning cycle. In systems where there are substantial numbers of overage learners, this strategy offers the possibility of very significant reduction in teacher costs per cycle.

### **Unqualified Teachers, Teachers in Training, Teacher Aides and Volunteers**

While streamlining of the salary structure and more efficient and equitable deployment of teachers can make a contribution to improving quality and equity without necessarily compromising teacher morale and motivation, these measures do not address the

situation where a very substantial expansion of the system is required to achieve universal primary education. These measures are a necessary but not sufficient condition for resolving the teacher costs conundrum. The major strategies which have enabled the rapid expansion of systems have almost always involved the recruitment of unqualified or lower-qualified teachers, or the use of teachers in training, or teacher aides and community volunteers. These strategies come with a high risk of compromising quality, and have only been successful where a range of other strategies have been put in place to address the major threats to quality. In all cases there are trade-offs involved, and there are relevant lessons to be learnt from the experience of such programmes. The section below provides a brief description of a number of these initiatives.

*Zimbabwe Integrated Teacher education Course (ZINTEC)*

In the period following liberation the Zimbabwe education system expanded at a phenomenal pace, with teacher numbers growing from 19 000 in 1980 to 54 000 in 1983 and 66 000 in 1990. Primary school enrolment increased from 800,000 in 1980 to more than 2 million by the end of 1982. Zimbabwe's Integrated Teacher Education Course (ZINTEC) was a programme that attracted and retained teachers. Teacher supply was increased by two methods: first, as enrolments went up, untrained teachers were employed particularly at primary level. Second, an accelerated teacher-training programme, the ZINTEC, was introduced. This course lasted for four years, but only the first and last terms of this period were spent in college, with the remainder being spent teaching in the schools. The programme expanded rapidly, and at its peak in the 1980s, there were five regional centres with a total of 3,000 graduates annually ( a small figure compared with overall increase from 19,000 to 66,000 over the decade). Clearly most of the remaining teachers joining the system were untrained.

ZINTEC was successful in terms of both quality and cost-effectiveness — the cost of training a teacher under ZINTEC is less than half the cost of conventional training precisely because the teachers spent most of the time of their training actually teaching in the classroom (Chung, 1993). These cost-saving measures were critical in keeping real unit costs down at the primary level over the 1980s, even though the salaries of African teachers rose as discrimination between black and white salaries ended (Colclough, 1993). Other cost-reducing measures were also introduced. To ensure maximum utilisation of existing equipment and facilities, schools ran two different sessions per day with two sets of teachers. Drop-out rates were kept low by ensuring automatic promotion throughout primary and first four years of secondary schooling. Not surprisingly, the survival rate to grade 4 was higher than any other Sub-Saharan country. Another means of achieving reduction in unit costs of schooling was the standardisation of class-sizes throughout the system by increasing class-size in many privileged schools.

The cost increases came later on mainly from the increased proportion of trained teachers emerging from the ZINTEC scheme, and the impact which this brought for average teacher earnings. Ultimately such cost increases could not be afforded, and the

scheme had to be much reduced. However, what is important is that the real increases in unit costs at primary level in Zimbabwe were somewhat lower than those of average teacher earnings over the whole decade, as a result of the series of cost-saving education reforms introduced by government (Colclough, 1993).

A key lesson to emerge is that strategies to induct large numbers of untrained teachers into the system and then provide them with on-the-job training can reduce average teacher costs radically, even when training costs are accounted for. However, as the trainee teachers become fully qualified these cost savings decline, and the final impact on the total salary bill can be prohibitive.

*Bangladesh Rural Advancement Programme (BRAC)*

This well known innovation is often cited as an example of successful innovation which has permitted the employment of untrained teachers and community volunteers who are supported by an intensive programme of support materials, training and guidance. The significant factor for this study is the cost structure. First, BRAC's costs are about equal to government formal schools (excluding the extra private costs of formal schooling such as uniforms and learning materials). Second, unlike formal government schools in all parts of the developing world which devote 90 per cent or more of total spending to teacher salaries, BRAC allocates almost 30 percent of the NFPE budget to management and supervision, 29 percent to teachers' salaries, and 6 percent to rent school space (UNICEF, 1993). Since poverty had been identified by Bangladeshi parents as a major reason for their children dropping out or not enrolling in formal schools, the NFPE program is designed so that parents incur practically no direct costs for sending their children to BRAC schools. School supplies are provided free, uniforms are not required, school hours are varied to home and agricultural cycle needs, and schools are located in close proximity to students' homes. BRAC school attendance results in less income loss to families than formal school attendance. The most striking feature of the BRAC programme, apart from the relatively low teacher costs, is the high success rate of the pupils, with more than 90% graduating, the majority of whom gain access to Class IV or higher in the state system.

The lesson to emerge here is that it is possible to substantially reduce teacher costs while improving quality, but the savings in teacher costs can be largely absorbed by support costs, if quality is to be maintained. The real achievement of the BRAC programme is the improvement in learning outcomes (greater cost-effectiveness) rather than reduction in per capita costs.

*Redeployment and pairing of teachers with community personnel (Guinea)*

One of the better known initiatives in redeployment referred to earlier also involved an innovation which had significant implications for increasing the teacher supply and reducing unit costs, through the pairing of experienced and qualified teachers with untrained teachers appointed from the community. This had the effect of bringing a large number of additional personnel into the system at the same time as mechanisms

were in place to support the new teachers with guidance from experienced personnel (Condé 1995).

*Community schools (Egypt)*

One of the most common responses of communities to the inability of governments to provide universal access to basic education is the establishment of community schools, fully or partially funded by communities, and owned and managed by communities. Many countries with low enrolment rates have experienced the phenomenon of community schools, and there have been different responses from the state. In the case described here, the response of the state was to accommodate and work with the schools.

In the Egyptian case, teachers who were not fully qualified from the community were employed as teachers, and provided with extensive support in the form of materials and intensive training programmes, in a well resourced conducive learning environment. Evaluations show a very satisfactory performance of pupils compared with pupils in state schools, and low drop out rates. The appointment of lower qualified local women as teachers not only provides employment opportunities for these women, but also frees up resources to be committed to teacher support, learning materials and facilities. The programme rests on a partnership with community, which provides classroom facilities, with local NGOs, UNICEF and the government providing other financial, material and policy support.

## **SOME LESSONS**

The major strategy to facilitate the expansion of education systems to meet enrolment targets has not involved reduction of individual teacher salaries. These tend to fluctuate in response to economic and fiscal conditions, and to be influenced strongly by political and historical factors. Effective reduction of teacher costs has, however, been achieved through a combination of improved teacher utilisation and lowering the average qualification and experience level of the teaching force by bringing in large numbers of unqualified or less qualified teachers, or by supplementing teaching capacity with teacher aides and community volunteers. In the interests of meeting enrolment targets, or in responding to community pressure, expansion of access has involved strategies which could pose a threat to quality. Where the quality of educational provision has deteriorated seriously, enrolment levels have tended to decline, demonstrating the inextricable relationship between quality and access. In assessing the policy trade-offs that have to be made in expanding access, there are some clear lessons from experience to provide guidance:

- Employment of unqualified or less-qualified personnel must be accompanied by strategies to provide ongoing support in the form of curriculum materials, inservice training and guidance. These bring with them attendant costs which must be taken into

the calculations when estimating the cost savings in employing less qualified teachers.

- Experience suggests that inservice programmes using a combination of distance and contact education is far more cost effective than institutional preservice training, if the benefits of teaching service during training are taken into account.
- It is possible to significantly reduce teacher costs by employing unqualified personnel and still achieve good quality learning, but much of the savings must be reinvested in development of curriculum and support materials, and in inservice training.
- Teacher associations can pose a serious obstacle to reform of the salary structure, and to attempts to reduce teacher costs. However, where teacher unions are strong, success has often required involvement of the unions in developing the strategy.
- Expansion of the teaching force using unqualified teachers who undergo training to become qualified can impose serious and unaffordable cost consequences as the teachers qualify for higher salaries. Planning of such expansions should take account of this factor.
- Community participation and support has been a critical factor in almost every initiative involving expansion of the teaching force while controlling costs. This has involved communities actually meeting employment costs of untrained teachers and teacher aides, or supplementing the salaries or non-salary costs, or relieving the state of other costs, such as school construction or teacher housing.

## CONCLUSION

Over a decade has passed since the 1987 World Bank Seminar on Teachers in Developing Countries. In the interim many of the strategies which were explored there have been implemented in developing countries. What has not been adequately done is an assessment of how effective those strategies have been, and what lessons we can learn. Some of the basic premises of that work have been confirmed by experience. It is less important to compare teachers salaries across countries than to understand what factors influence the market for teachers in any one country. It is clear that community involvement is critical not only to reducing costs but also to improving teacher effectiveness. The financial exigencies of the past decade have resulted in a wide range of very creative strategies for reducing teacher costs or improving learning outcomes. We are only now beginning to learn the lessons which these experiences have taught us. If we are to benefit from this experience, we must begin systematically to share and analyse this experience. This paper, and the research on which it draws, is a step for UNICEF in that direction.

**Additional Teachers Needed to Reach NER 100: 3 Scenarios based on varying pupil-teacher ratios**

		No. of teachers					
		P-T ratio:	P-T ratio:	P-T ratio:	P-T ratio:	P-T ratio:	P-T ratio:
		Current	Target 40	Target 30	Current	Target 40	Target 30
		1	2	3	4	5	6
<b>Latin America and Caribbean</b>	Argentina	14989	14989	14989	5	5	5
	Bolivia	5019	5019	5019	10	10	10
	Chile	11208	11208	11208	14	14	14
	Costa Rica	2288	2288	2364	14	14	15
	Cuba	371	371	371	1	1	1
	Dominican Rep.	9835	9835	11474	24	24	27
	El Salvador	12835	12835	14547	42	42	47
	Haiti	56044	56044	56044	293	293	293
	Honduras	2978	2978	3672	11	11	14
	Jamaica	0	0	0	0	0	0
	Nicaragua	5180	5180	6388	25	25	31
	Panama	1478	1478	1478	9	9	9
	Paraguay	1256	1256	1256	4	4	4
	Trinidad and Tobago	985	985	985	14	14	14
	Uruguay	939	939	939	6	6	6
	Venezuela	23886	23886	23886	13	13	13
	Sub-Total	149290	149290	154620			

**Source:** Estimated from UNESCO Statistical Yearbook, 1996.

**Notes:** Column 1 estimates the number of additional teachers required to reach NER 100 assuming the current pupil-teacher ratio remains.

Columns 2 and 3 estimate the number of additional teachers required, assuming the pupil-teacher ratio is 40 and 30 respectively. Columns 4, 5 and 6 estimate the additional teachers required as a percentage of the total number of teachers in the country at the primary level. The same description applies for Appendix Table A(ii).

		No. of teachers		As % of current # of teachers				
		P-T ratio:	P-T ratio:	P-T ratio:		P-T ratio:	P-T ratio:	P-T ratio:
		Current	Target 40	Target 30		Current	Target 40	Target 30
		1	2	3		4	5	6
<b>Sub Saharan Africa</b>	Benin	11560	14161	18882		90	110	147
	Botswana	440	440	440		4	4	4
	Burkina Faso	23073	33456	44608		223	323	431
	Burundi	9710	15294	20392		94	148	197
	Cameroon	13042	14998	19997		32	36	48
	Central African Rep.	2542	5721	7627		71	159	212
	Chad	15009	23263	31018		170	263	351
	Eritrea	16302	16302	21736		291	291	388
	Ethiopia	187420	187420	187420		246	246	246
	Gambia	2636	2636	2636		81	81	81
	Guinea	25943	31780	42374		269	330	440
	Guinea-Bissau	3884	3884	3884		123	123	123
	Kenya	19097	19097	19734		10	10	11
	Lesotho	4067	4982	6643		54	67	89
	Madagascar	21617	21617	28822		57	57	77
	Malawi	42929	66541	88721		93	144	192
	Mali	36504	60232	80310		444	732	976
	Mauritius	382	382	382		6	6	6
	Mozambique	35651	51694	68925		146	212	282
	Namibia	1368	1368	1459		12	12	13
	Niger	41628	41628	44403		302	302	323
	Rwanda	7781	11282	15043		41	59	79
	Senegal	15184	20498	27331		106	143	191
	Somalia	110314	110314	110314		1067	1067	1067
	South Africa	20155	20155	24858		9	9	12
	Tanzania , U. Rep.	99052	99052	122164		98	98	121
	Togo	5501	7289	9718		44	58	78
	Uganda	65629	65629	67817		83	83	86
	Zaire	97090	106799	142399		86	95	127
	Zambia	8610	8825	11767		23	24	32
	Sub-Total	944119	1066738	1271822				

## Appendix A(i) cont..

		No. of teachers					
		P-T ratio:		P-T ratio:		P-T ratio:	
		Current		Target 40		Target 30	
		1	2	3	4	5	6
<b>Middle East and North Africa</b>	Algeria	10497	10497	10497	6	6	6
	Egypt	39428	39428	39428	13	13	13
	Iran, Islamic Rep. of	10774	10774	11492	4	4	4
	Iraq	35167	35167	35167	27	27	27
	Jordan	5821	5821	5821	12	12	12
	Kuwait	10860	10860	10860	122	122	122
	Libyan	3486	3486	3486	3	3	3
	Morocco	63029	63029	63029	59	59	59
	Oman	4290	4290	4290	37	37	37
	Saudi Arabia	96490	96490	96490	64	64	64
	Syrian Arab Rep.	5358	5358	5358	5	5	5
	Tunisia	5448	5448	5448	9	9	9
	UAE	75	75	75	0	0	0
	Sub-Total	290724	290724	291442			
<b>South Asia</b>	Afghanistan	65718	95290	127054	290	421	562
	Bangladesh	80559	126880	169174	43	67	89
	India	567868	681442	908589	25	30	40
	Nepal	56579	56579	73553	71	71	93
	Sub-Total	770724	960192	1278370			
<b>East Asia and Pacific</b>	China	232213	232213	232213	4	4	4
	Indonesia	39639	39639	39639	3	3	3
	Korea, Rep. of	5888	5888	5888	4	4	4
	Lao Peo. Dem. Rep.	10554	10554	10554	46	46	46
	Papua New Guinea	4961	4961	6449	37	37	48
	Philippines	11640	11640	13192	4	4	4
	Singapore	0	0	0	0	0	0
	Sub-Total	304895	304895	307935			
<b>Central Asia and Eastern Europe</b>	Bulgaria	12927	12927	12927	22	22	22
	Croatia	6389	6389	6389	25	25	25
	Estonia	1793	1793	1793	27	27	27
	Hungary	8335	8335	8335	9	9	9
	Latvia	2386	2386	2386	23	23	23
	Poland	13554	13554	13554	4	4	4
	Romania	18647	18647	18647	31	31	31
	Russian Federation	25050	25050	25050	6	6	6
	TFYR Macedonia	2392	2392	2392	18	18	18
	Sub-Total	91472	91472	91472			

Appendix A (ii)

**Additional Teachers Needed to Reach GER 100: 3 Scenarios based on varying pupil-teacher Ratios.**

		No. of Teachers			As % of current # of teachers		
		P-T ratio:	P-T ratio:	P-T ratio:	P-T ratio:	P-T ratio:	P-T ratio:
		Current	Target 40	Target 30	Current	Target 40	Target 30
Latin	Argentina	0	0	0	0	0	0
America	Bolivia	2945	2945	2945	6	6	6
and	Brazil	20571	20571	20571	2	2	2
Caribbean	Chile	1190	1190	1190	2	2	2
	Colombia	0	0	0	0	0	0
	Costa Rica	0	0	0	0	0	0
	Cuba	0	0	0	0	0	0
	Dom. Rep.	1311	1311	1529	3	3	4
	Ecuador	0	0	0	0	0	0
	El Salvador	7911	7911	8966	26	26	29
	Guatemala	8903	8903	9497	20	20	21
	Haiti	15043	15043	15043	79	79	79
	Honduras	0	0	0	0	0	0
	Jamaica	0	0	0	0	0	0
	Mexico	0	0	0	0	0	0
	Nicaragua	0	0	0	0	0	0
	Panama	0	0	0	0	0	0
	Paraguay	0	0	0	0	0	0
	Peru	0	0	0	0	0	0
	Trin/Tobago	461	461	461	6	6	6
	Uruguay	0	0	0	0	0	0
	Venezuela	7661	7661	7661	4	4	4
	Sub-Total	65996	65996	67862			

Appendix A (ii) cont..

		No. of Teachers			As % of current # of teachers		
		P-T ratio:	P-T ratio:	P-T ratio:	P-T ratio:	P-T ratio:	P-T ratio:

## Managing Teacher Costs for Access and Quality

		Current	Target 40	Target 30	Current	Target 40	Target 30
Sub	Angola	3064	3064	3268	10	10	11
Saharan	Benin	6707	8216	10954	52	64	85
Africa	Botswana	0	0	0	0	0	0
	Burkina Faso	16531	23969	31959	160	232	309
	Burundi	4645	7316	9755	45	71	94
	Cameroon	1459	1677	2237	4	4	5
	CAR	1447	3255	4340	40	91	121
	Chad	6114	9477	12635	69	107	143
	Cote d'Ivoire	18296	18296	24395	45	45	61
	Eritrea	6449	6449	8598	115	115	153
	Ethiopia	250918	250918	250918	330	330	330
	Gambia	1553	1553	1553	48	48	48
	Ghana	22109	22109	22109	31	31	31
	Guinea	11538	14134	18846	120	147	196
	Guinea-Biss	2176	2176	2176	69	69	69
	Kenya	16894	16894	17457	9	9	10
	Lesotho	391	479	639	5	6	9
	Madagascar	13563	13563	18084	36	36	48
	Malawi	11136	17261	23015	24	37	50
	Mali	18345	30270	40360	223	368	491
	Mauritania	2318	3014	4019	45	58	78
	Mauritius	0	0	0	0	0	0
	Mozambique	16207	23500	31333	66	96	128
	Namibia	0	0	0	0	0	0
	Niger	35263	35263	37614	256	256	273
	Nigeria	42265	42265	52127	10	10	12
	Rwanda	5694	8257	11009	30	43	58
	Senegal	10179	13742	18323	71	96	128
	Sierra Leone	10369	10369	11752	96	96	109
	Somalia	79115	79115	79115	765	765	765
	South Africa	0	0	0	0	0	0
	Tanzania	43271	43271	53367	43	43	53
	Togo	1174	1555	2074	9	12	17
	Uganda	39818	39818	41145	50	50	52
	Zaire	53002	58302	77736	47	52	69
	Zambia	1535	1573	2098	4	4	6
	Zimbabwe	0	0	0	0	0	0
	Sub-Total	753547	811123	925011			

Appendix A (ii) cont..

		No. of Teachers			As % of current # of teachers		
		P-T ratio:	P-T ratio:	P-T ratio:	P-T ratio:	P-T ratio:	P-T ratio:
		Current	Target 40	Target 30	Current	Target 40	Target 30
Middle	Algeria	3229	3229	3229	2	2	2

Managing Teacher Costs for Access and Quality

East/ NA	Egypt	17324	17324	17324	6	6	6
	Iran	0	0	0	0	0	0
	Iraq	13429	13429	13429	10	10	10
	Jordan	2748	2748	2748	6	6	6
	Kuwait	4784	4784	4784	54	54	54
	Libya	0	0	0	0	0	0
	Morocco	41057	41057	41057	38	38	38
	Oman	2126	2126	2126	18	18	18
	Saudi	48750	48750	48750	32	32	32
	Sudan	61214	61214	73457	93	93	111
	Syria	547	547	547	0	0	0
	Tunisia	0	0	0	0	0	0
	UAE	0	0	0	0	0	0
	Yemen	16167	16167	19939	36	36	44
	Sub-Total	211375	211375	227390			
South Asia	Afghanistan	56068	81299	108399	248	359	479
	Bangladesh	51399	80953	107937	27	43	57
	Bhutan	6013	6013	6213	310	310	321
	India	95864	115037	153383	4	5	7
	Nepal	4620	4620	6006	6	6	8
	Pakistan	429325	482991	643988	124	140	187
	Sri Lanka	0	0	0	0	0	0
	Sub-Total	643289	770912	1025926			
East Asia and Pacific	China	0	0	0	0	0	0
	Indonesia	0	0	0	0	0	0
	Korea, Dem.	0	0	0	0	0	0
	Korea, Rep.	2919	2919	2919	2	2	2
	Lao Rep.	849	849	849	4	4	4
	Malaysia	10548	10548	10548	8	8	8
	Mongolia	171	171	171	3	3	3
	Myanmar	0	0	0	0	0	0
	Papua	4844	4844	6297	36	36	47
	Philippines	0	0	0	0	0	0
	Singapore	0	0	0	0	0	0
	Thailand	8054	8054	8054	3	3	3
	Viet Nam	0	0	0	0	0	0
	Sub-Total	27385	27385	28838			

		Appendix A(ii) cont..					
Central	Albania	1292	1292	1292	4	4	4
Asia	Belarus	1866	1866	1866	5	5	5
and	Bulgaria	9978	9978	9978	17	17	17
Eastern	Croatia	3818	3818	3818	15	15	15
Europe	Czech Rep.	135	135	135	1	1	1
	Estonia	1331	1331	1331	20	20	20
	Hungary	4714	4714	4714	5	5	5
	Kazakstan	11323	11323	11323	16	16	16
	Latvia	2159	2159	2159	21	21	21
	Lithuania	1052	1052	1052	8	8	8
	Moldova	3901	3901	3901	29	29	29
	Poland	8281	8281	8281	3	3	3
	Romania	9472	9472	9472	16	16	16
	Russ.Fed	0	0	0	0	0	0
	Slovakia	0	0	0	0	0	0
	Tajikistan	3026	3026	3026	12	12	12
	Macedonia	1862	1862	1862	14	14	14
	Turkey	2318	2318	2318	1	1	1
	Ukraine	19865	19865	19865	15	15	15
	Uzbekistan	23390	23390	23390	26	26	26
	Sub-Total	109785	109785	109785			

Source: UNESCO, Statistical yearbook, 1996.

<b>Appendix B(i)</b>													
<b>Trends in Teacher salaries, 1983-95 (base 100:1989-91 average)</b>													
	1883	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
Burkina Faso						93	93	94	113				
Cote d'Ivoire			55					100					
Mali						100	100						
Chad				85		140	109	98	94				
Mauritius	73	102	101	72	109	100	89	84	127	128	141	135	131
Rwanda		108	116		113	110	109	104	87				
Zambia				127		122	103	87	110				
Bahrain		89	154		98	97	98	99	104	104	102	100	
Algeria (Range, Min)			140	124	116	109	100			75			
(Range, Max)			140	124	116	109	100						
Sudan							97	134	69		70		
Bangladesh				116		97	88	82	130	125	125		191
* China								88	101	138	129		
Korea, Rep Of (Male)	60	72	74	81	85	90	99	90	111	128	141	149	
(Female)	72	79	85	96	92	83	89	100	111	126	140	149	
Singapore (Male)									100	115	109	159	111
(Female)			202	112	91	105	108	92					
Thailand			77						100		141	133	
Argentina		159	84	53	72	85	100				46	44	43
Barbados			197	91	98	110	106	102	91	86	93	92	91
Bolivia					80		76		124	125	122	129	149

Appendix B(i)													
cont..													
Belize	214	207	199	222	12	103	103	100	98	128	142	146	142
Honduras (Male)	61	1267	40	40	260	185		113	87	184	81	70	113
(Female)	44	873	28	36	182	223		125	75	134	64	57	89
St Lucia	83	82	32			69	98	102	100				
Mexico	130							100	100				
Suriname	466	378			96			100					
El Salvador							76	115	109	104	120		104
T & Tobago			177	164	148	138		100					
Uruguay			82	84	92	99	106	95	99	103			
Venezuela	218	185		151			97	103					
Cyprus (Male)	89	93	100	100	105	103	99	100	101	114	91	106	105
(Female)	82	85	89	92	97	99	92	102	105	104	97	108	108
Romania (Male)			86	84				90	110	120	99	93	103
(Female)			86	84				90	110	120	99	93	100

Source: ILO Database

<b>Appendix B (ii)</b>								
<b>Real Teacher Wage</b>								
			<b>1980</b>	<b>1982</b>	<b>1985</b>	<b>1988</b>	<b>1990</b>	<b>1992</b>
<b>AFRICA</b>								
Burkina Faso			100	89	77		88	
Burundi			100	89	77		88	
Central African Republic			100	98	63		73	
Ghana			100	76	96		111	
Madagascar			100	64	71	45		71
Malawi			100	99	96	87		
Mauritius			100	85	83			78
Rwanda			100	91	93	74		
Zimbabwe			100	89	63		115	
Togo			100			105		
<b>LATIN AMERICA</b>								
Argentina			100	69	95	59		45
Chile			100	34	23	73		
Colombia			100	103	102	102		
Costa Rica			100	74	72	75	96	
El Salvador			100	78	62	43		32
Mexico			100	82	58	22		40
<b>ASIA</b>								
Bangladesh			100		143			97
Indonesia			100		158	134		162
Korea, Republic of					100	125		141
Note: 1988 data for Chile, Colombia and Guatemala, is from 1987 and For MALawi, Rwanda, and Korea is from 1989. 1990 data for Burkina Faso, Burundi, Madagascar, and Zimbabwe is from 1991. 1993 data for Madagascar, Argentina, and El Salvador is from 1992.								

Source: ILO, 1996

## Teacher Salaries in Dollars (Most recent years)

Country	GNP	Year	Average Primary Teacher Salary	
	per capita in US\$		As Multiple of GDP per capita	in US\$
Botswana	2,580	1991	3.0	7740
Rwanda	590	1989	9.7	5723
Zimbabwe	570	1992	7.6	4326
CAR	400	1989	10.8	4320
Mauritania	500	1988	8.3	4150
Cote d'Ivoire	670	1992	5.8	3853
Mauritius	2,240	1993	1.4	3181
Niger	300	1989	9.7	2910
Burkina Faso	260	1989	10.5	2730
Mali	200	1990	12.8	2560
Lesotho	520	1988	4.6	2392
Benin	410	1992	5.8	2366
Togo	400	1988	5.8	2320
Ethiopia	120	1990	15.4	1848
Burundi	220	1991	8.3	1826
Guinea	500	1991	2.6	1300
Chad	210	1991	5.8	1218
Kenya	310	1993	3.4	1060
Madagascar	220	1988	3.5	770
Tanzania	120	1988	4.7	564
Malawi	170	1989	3.3	558
Ghana	390	1990	0.8	312

## Managing Teacher Costs for Access and Quality

Country	GNP	Year	Average Primary Teacher Salary	
	per capita in US\$		as Multiple of GDP per capita	in US\$
Barbados	6,510	1989	2.6	17186
Suriname	3,700	1990	2.8	10397
Trinidad and Tobago	3,610	1990	2.0	7328
Dominica	1,900	1989	2.8	5339
Panama	2,600	1993	1.9	4836
Mexico	3,610	1993	1.3	4801
Uruguay	3,830	1993	1.0	3830
Argentina	7,220	1993	0.5	3682
Jamaica	1,340	1992	2.5	3350
Venezuela	3,190	1988	0.8	2520
El Salvador	1,200	1993	1.7	1992
Peru	1,490	1993	1.3	1877
Bolivia	640	1989	2.5	1594
Ecuador	980	1989	1.6	1568
Costa Rica	1,770	1990	0.8	1345
Nicaragua	340	1992	3.0	1020
Haiti	370	1990	2.0	744
Oman	6,140	1991	2.4	14736
Syrian Arab Republic	2,704	1993	3.6	9680
Tunisia	1,720	1993	3.0	5229
Algeria	1,840	1992	2.8	5078
Morocco	1,030	1991	4.4	4532
Jordan	1,240	1990	2.3	2802
Bangladesh	210	1991	4.7	981
Sri Lanka	567	1993	1.4	777
Korea Republic	7,660	1993	1.9	14784
Singapore	15,730	1993	0.9	14629
Malaysia	2,830	1992	2.1	5915
Myanmar	1,276	1993	1.6	2067
Philippines	850	1993	2.4	2066
Thailand	2,110	1993	0.9	1899
Indonesia	740	1993	1.2	888
Cambodia	207	1993	1.1	236

Appendix C cont..

Country	GNP	Year	Average Primary Teacher Salary	
	per capita in US\$		as Multiple of GDP per capita	in US\$

Cyprus	10,380	1992	2.2	23147
Turkey	2,970	1993	1.6	4811
Hungary	3,350	1993	1.1	3752
Bulgaria	1,330	1992	2.0	2633
Poland	2,260	1993	1.0	2147
Czech Republic	2,450	1993	0.9	2083
Switzerland	35,750	1993	1.7	61490
Canada	20,290	1992	2.0	39768
Japan	28,770	1992	1.4	39703
Germany	22,490	1993	1.7	38683
Denmark	26,580	1993	1.4	36946
United Kingdom	18,050	1993	1.8	31768
United States	24,780	1993	1.2	30232
Netherlands	20,950	1993	1.4	29749
France	22,490	1993	1.3	29462
Belgium	21,650	1993	1.3	28578
Ireland	13,010	1993	2.2	28362
Austria	23,500	1993	1.2	27730
Spain	13,580	1993	2.0	27024
Sweden	24,740	1993	1.1	26967
Norway	25,960	1993	1.0	26739
Finland	19,400	1993	1.3	25026
Italy	19,840	1993	1.2	22816
Portugal	8,950	1993	2.0	17811
New Zealand	12,600	1993	1.4	17010
Malta	7,970	1993	1.8	14187
Greece	7,480	1993	1.7	12641

<b>Appendix D</b>							
<b>Ratio of Average Salary to GDP per Capita, by region</b>							
<b>West and Central Africa</b>		<b>South and Eastern Africa</b>		<b>Asia</b>		<b>Latin America</b>	
Mali	12.8	Ethiopia	15.4	Bangladesh	4.67	Suriname	2.81
CAR	10.8	Rwanda	9.7	Hong Kong	2.46	Dominica	2.81
Burkina Faso	10.5	Burundi	8.3	Philippines	2.43	Bolivia	2.49
Niger	9.7	Zimbabwe	7.59	Malaysia	2.09	Panama	1.86
Mauritania	8.3	Average	5.9	Korea, Republic of	1.93	Average	1.79
Average	7.28	Tanzania	4.7	Average	1.84	El Salvador	1.66
Togo	5.8	Lesotho	4.6	Myanmar	1.6	Ecuador	1.6
Benin	5.77	Madagascar	3.5	Japan	1.38	Mexico	1.33
Cote d'Ivoire	5.75	Kenya	3.42	Sri Lanka	1.37	Peru	1.26
Guinea	2.6	Malawi	3.28	Indonesia	1.2	Uruguay	1
Ghana	0.8	Botswana	3	Cambodia	1.14	Venezuela	0.79
		Mauritius	1.42	Singapore	0.93	Costa Rica	0.76
				Thailand	0.9	Argentina	0.51

Source: Carnoy and Welmond, 1996.

Appendix 'E'											
Salary/GDP per capita adjusted for literacy											
Sorted by residual											
Barbados	1.35	Ethiopia	8.29	Jordan	-0.00	Philippines	0.93	Bulgaria	0.76	Ireland	1.06
Suriname	1.09	CAR	5.97	Syrian Arab R	-0.20	Korea Rep.	0.71	Cyprus	0.63	Canada	0.65
Trinidad and Tobago	0.81	Mali	5.22	Tunisia	-1.12	Malaysia	-0.46	Hungary	-0.00	United Kingdom	0.64
Dominica	0.07	Zimbabwe	5.14	Algeria	-1.88	Sri Lanka	-0.61	Poland	-0.17	Germany	0.60
Jamaica	0.05	Rwanda	4.97	Morocco	-1.95	Thailand	-0.70	Czech Repub.	-0.27	Switzerland	0.60
Panama	-0.02	Burkina Faso	1.78	Oman	-4.81	Singapore	-0.95	Turkey	-1.12	Spain	0.49
Bolivia	-0.15	Mauritania	1.38			Myanmar	-1.02			Netherlands	0.30
Uruguay	-0.31	Burundi	1.10			Indonesia	-1.35			Denmark	0.27
Ecuador	-0.38	Lesotho	0.82			Bangladesh	-2.25			Japan	0.26
Mexico	-0.65	Tanzania	0.63							New Zealand	0.23
Costa Rica	-0.74	Madagascar	0.57							Belgium	0.20
Peru	-0.81	Niger	0.50							France	0.19
Argentina	-0.90	Kenya	0.30							Greece	0.19
Venezuela	-1.09	Togo	0.21							Finland	0.17
Nicaragua	-1.26	Chad	-0.17							United States	0.10
El Salvador	-2.03	Botswana	-0.88							Austria	0.06
Haiti	-4.25	Cote d'Ivoire	-0.98							Sweden	-0.03
		Mauritius	-1.22							Norway	-0.09
		Benin	-1.25							Italy	-0.16
		Malawi	-1.93							Portugal	-0.46
		Ghana	-3.56							Malta	-0.58
		Guinea	-4.51								

Note: The residual is the difference between the expected value (given literacy rate in the country) and the actual value of the salary/GDP per capita ratio.

Source: Estimated from Carnoy and Welmond (1996) (based on UNESCO and ILO data).

<b>Appendix F</b>										
<b>Primary teacher salaries as a ratio of selected public administration employees</b>										
Country	Office Clerk 142		Fire-fighter 143		Stenograph/ 140 Typist		Local Authority 139c Official		Central govern. 139a	
	R.T.	E.G.	R.T.	E.G.	R.T.	E.G.	R.T.	E.G.	R.T.	E.G.
<b>West &amp; Central Africa</b>										
CAR		2.6		2.6		1.6				
Sierra Leone		0.8		0.9		0.6		0.6		0.5
<b>Eastern and Southern Africa</b>										
Ethiopia								0.3		0.2
Madagascar		1.4		1.4		1.2		0.9		0.9
Mauritius		1.2		1.3		1.3				0.8
<b>Middle East &amp; North Africa</b>										
Bahrain		2.2		2.2		2.1				0.4
<b>East Asia &amp; Pacific</b>										
Cambodia		1.0		1.1				0.8		0.5
Mongolia		1.1				1.3		0.9		0.7
Myanmar		0.9		1.1		0.9				
<b>Latin America &amp; the Caribbean</b>										
Argentina		1.1				0.7				0.4
Barbados		1.0		0.8		1.0				0.5
Belize		0.7		0.6		0.5		0.3		0.1
Costa Rica		1.2						0.6		1.7
Nicaragua		1.1								0.7
St. Vincent		1.0				1.0				0.6
Uruguay		3.7								2.2
<b>CEE/CIS &amp; Baltics</b>										
Cyprus		1.2		1.1				1.0		1.0
Czech Rep.		1.1		1.0		1.2		0.9		0.7
Estonia		1.0		1.2		1.0				
Romania		1.5		1.7		1.4				1.1
Russian Fed.						1.0				0.7
Slovakia				0.8						
Average		1.4		1.3		1.1		0.7		0.8
Stan. Dev.		0.7		0.5		0.4		0.3		0.5
Sample		18		14		15		9		18
without CEE/CIS										
Average										
Stan.Dev.		1.4		1.3		1.1		0.6		0.7
Sample		0.7		0.6		0.5		0.2		0.6
		14		9		11		7		14

RT = Wage or Salary rates (Taux de salaire)

EG = Average earnings (Gains Moyens)

Source: ILO database

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