

# Feasibility of Implementation of Right to Education Act

PANKAJ S JAIN, RAVINDRA H DHOLAKIA

This article argues that even an allocation of 6% of the gross domestic product to the education budget would not be sufficient to fund universal school education until the very distant future if the government school system is used as the only instrument. The only way to meet the Right to Education obligation is to rely on low cost private schools as a significant instrument of the government education policy. On the contrary, the proposed RTE bill introduces provisions that would oppose low cost private schools. Therefore, the legislation for RTE needs to be modified and framed with specific provisions for private-public partnerships.

The Directive Principles of Indian Constitution obligates the Indian government to ensure universal school education. In the wake of various official committees and policy pronouncements in this regard, the Indian government has decided to submit a Right to Education (RTE) bill for parliamentary approval, which shall make it a right of each child to receive school education during 6-14-year age. The draft of this bill that implicitly mandates reliance on government type of school system as the major vehicle for RTE implementation has been approved by the cabinet. The present article analyses budgetary implications of implementing this right that provides for its court mandated enforcement.

## 1 Background

In our analysis, the demands on the use of education budget have been pegged at a level that has been endorsed by the Tapas Majumdar Committee (1999), which corresponds to typical worldwide practices where the universal school education goal has been realised. The norm of the education budget of 6% of the gross domestic product (GDP) has been taken which has been articulated by various committees as the ideal norm in due course of time. Currently, we do not spend even 4% of GDP on education when we consider combined budgets of the centre and the states. Many countries like China and Singapore have provided for universal government-funded schooling even after spending less than 4% of the GDP on their education budget. However, no major country in the world (except Cuba) has allocated more than 6% of its GDP to education on a sustained basis even while ensuring government-funded universal school education and substantial funding of higher education for all (Statistical Year Book UNESCO).

In India, the Kothari Commission (1966), National Policy on Education (1986), Saikia Committee (1996), and Tapas Majumdar Committee (1999) have assessed the requirements of public provision of universal school education under different assumptions affecting the cost of such a provision. However, none has implied or even indicated that exclusive reliance on the government school system with permanent regular schoolteachers could make an education budget of 6% of GDP inadequate and insufficient to ensure universal school education in the country in the short or medium term. We examine this aspect thoroughly in this paper because it has implications on the content and instrumentality of implementation of the RTE legislation.

In Section 2, we present the estimation framework and crucial assumptions about the parameter values in future years. The third section then presents our estimates and discusses implications under alternative scenarios. The fourth and final section discusses policy implications and possible solutions for the implementation of the RTE Act in India.

## 2 Estimation Framework

Our estimation framework has two distinct components. First, we estimate the total money available for each child eligible to go to school, as per national priority and commitment. This is done by estimating the proportion of GDP ( $100 \cdot b\%$ ) available as overall education budget and its share ( $100 \cdot a\%$ ) that would be spent on school education, with  $(1-a)$  going to higher secondary, college, higher, professional and adult education. The total amount of money available for school education is, then, divided by the number of student population ( $SP$ ) in school-going age to estimate the budget available per child in schools. Next, we determine how much money can be paid as teacher salary, for the given educational spending per child. This is done by estimating the share of money ( $100 \cdot c\%$ ) that had to be spent on various activities of the education department other than the salary of teachers. The share of money available to spend on teachers,  $(1-c)$ , is then used to determine

Pankaj S Jain ([pjain2002@yahoo.com](mailto:pjain2002@yahoo.com)) is at Gyan Shala, Ahmedabad and Ravindra H Dholakia ([rdholakia@iimahd.ernet.in](mailto:rdholakia@iimahd.ernet.in)) is with the Indian Institute of Management, Ahmedabad.

the monthly salary that teachers can be given at the start of their career. For this, we estimate the number of children that a teacher would cover, i.e., student-teacher ratio (STR), the share of total spending on teachers in the form of salaries ( $100 \cdot d\%$ ) with the rest spent on benefits, a parameter linking the career start salary with the average over the career salary (e), and annual-monthly salary converter (12).

The above analytical framework is represented by the following four equations. Total money available for school education/year = ( $b \cdot a \cdot \text{GDP}$ ) (1)

Total education spending per child =  $A = (b \cdot a \cdot \text{GDP}) / \text{SP}$ . (2)

Annual spending per teacher =  $B_1 = A \cdot (1-c) \cdot \text{STR}$  (3)

Average monthly career start salary of teachers =  $B = (B_1/12) \cdot d \cdot e$  (4)

where: GDP is gross domestic product; b is the proportion of GDP that is allocated as education budget; a is the share of the total education budget that is spent on school education; SP is the student population in school-going age; c is the share of school education spending on all educational programme expenses other than spending on teachers; STR is the student-teacher ratio; d is the share of total spending on teachers that they receive as salary while  $1-d$  is spent as benefits to teachers; e is the ratio of salary at the start of the career to the average salary over teachers' career of around 30 years.

Since policy decisions can be taken only with a medium- to long-term perspective, we estimate all these parameters with five-year intervals over 2006-21, using the data from the most reliable available sources.

Indiastat.com tables on Indian population readily provide population projection by broad age groups. We have adopted their projections for the age-group of 5-14 years as our estimates of the children in the school-going age group of 6-15 years to be on a conservative side. These estimates are provided in Table 1. It is clear from the table that as per the projections of Indiastat.com, the absolute population of children in the school-going age-group of 6-15 years is sharply falling from 244 million in the year 2006 to 234 million in the year 2011 to 226 million in the year 2021. While we have our reservation to forecast

**Table 1: Budget Availability (at 2006 Prices) Per Child with Education Budget at 6% of GDP**

Year	Total Estimated Population in India (in '000)	Population in 5 to 9-Year Age Group (%)	Population in 10 to 14-Year Age Group (%)	Total Number of Children in 5-14 Year-Age Group (in '000)	GDP (Rs in Crore) with 9% pa Real Growth #1	School Education Budget Available/Child/Year.in Rs #2	Education Fund Available/Child/Year in Rs (80% Coverage) #3
1	2	3	4	5	6	7	8
2006	11,21,914	10.72	11.01	2,43,792	35,80,000	5,874	7,342
2011	12,01,810	9.52	9.94	2,33,872	55,58,920	9,508	11,885
2016	12,77,770	8.9	8.9	2,27,443	85,53,087	15,042	18,803
2021	13,47,742	8.4	8.4	2,26,421	1,31,59,984	23,249	29,061

# 1: GDP growth is considered on actual basis till 2006-07 and then @9% pa.

#2: Total School Education budget is taken as = 2/3rd of 6% of GDP (while 1/3rd is left for higher school and university education), which is divided by total number of children in 5-14 year age group and assuming 100% coverage of children.

#3: This column gives budget per child by assuming that only 80% children would be covered with full budgetary support of 6% of GDP.

such a sharp decline in the population of children, we accept these projections to be on the conservative side. If the number of children in this age group turns out to be more, then the money available per child would be less and hence the salary that could be paid to each teacher would be less than our estimates given in Section 3.

Secondly, we can conduct the whole exercise at constant 2006 prices so that all inflation-related components of the pay-package of the schoolteachers like dearness and other allowances can be ignored.

### 3 Alternative Scenarios

We have altogether seven parameters to estimate in our framework including the growth rate of real GDP in India over the next 13 years and the STR. Taking the targets of the national-five-year plans, we have considered the growth rate of 9% as the compounded annual growth rate of real GDP over the period 2006-21. We believe that this rate is unlikely to be surpassed on a sustained basis. Moreover, as argued in Section 1, we do not believe that more than 6% of GDP can be spent on the education sector by the central and all state governments together in India. We, therefore, take  $b = 0.06$  for estimation. Thus, we are effectively assuming the maximal possible availability of school budget over years. It is also important to note that budget availability per child is consistently growing over years since the growth rate of the economy (GDP) is substantially higher than the growth rate of the children population.

In order to estimate our parameter 'a', i.e., the fraction of the total education budget spent on school education, we can consider the average value observed over the last three to four years in the combined budgets of the states and the

union government in the country. However, we need to recognise that currently India is far from achieving universal school education and that the higher education at present remains substantially subsidised and not privatised. Currently, this proportion in India is around 60%. Over years, we can expect these conditions to change in such a way that about two-thirds of the total budget on education sector would be spent on school education, i.e.,  $a = 0.67$ , reflecting national priority and emphasis on school education.

For estimating our parameter '(1-c)', i.e., the proportion of school budget spent on teachers, we do not have any readily available secondary source of data. However, we have some primary data on the survey conducted in more than 200 schools from seven districts of six states such as Andhra Pradesh, Karnataka, Madhya Pradesh, Rajasthan, Uttar Pradesh and Tamil Nadu over the last four years (see, Bajpai et al 2005, 2008a, 2008b). The proportion of the salaries of teachers in the total school budget is substantially lower in the government schools than in the private schools. In the government schools, it works out to an average of about 70%. Considering the cost of teachers' training, inspection and other departmental administrative staff this proportion may be 60% to 65%. We can, therefore, take this proportion to be 65%, so to be on the conservative side, i.e.,  $(1-c) = 0.65$ . This share of spending on teachers' emolument represents a very liberal assumption in favour of the teacher, since the remaining share of 35% is to cover all capital expenditure on school infrastructure building and maintenance, all school administrative and supervisory officers, including Block and Cluster Resource Coordinators and school inspectors, teacher training and curriculum planning set up including the

District Institutes of Education and Training (DIETs) and State Councils of Educational Research and Training (SCERTs), provisions of free textbooks, and annual examination, etc.

The estimate of the parameter 'd' in our framework, i.e., ratio of teachers' salaries and the total cost to government of employing teachers, is obtained from the special study sponsored by the Sixth Central Pay Commission (CPC). The study conducted by the Xavier Labour Research Institute (see, Premrajan et al 2007) estimated the cost to government to be around 40% more than the salary in the scales of the schoolteachers, i.e.,  $d = 1/1.4 = 0.7143$ .

The estimate for the parameter 'e' in our framework, i.e., the ratio of the starting salary at the beginning of the career and the average salary of a schoolteacher over the whole working life taken as 40 years, is obtained from the recommended increments of 3% per annum in the running pay-bands of the schoolteachers as per the announcement through extraordinary resolution of the Ministry of Finance dated 29 August 2008. At 20 years of average work experience, the increments would add up to about 80% of the initial salary, i.e.,  $e = 1/1.8 = 0.5556$ .

Finally, we consider the STR for the relevant period of time. The Tapas Majumdar Committee (1999) recommended it to be 30:1, which is higher than the norm of 18 to 25 in most low and middle income countries like Argentina, Brazil, China, Egypt, Indonesia, Malaysia, Sri Lanka and Thailand (Jha et al 2008). Only in India and Philippines, this ratio exceeds 30. Currently the ratio in government schools in India is around 36 (in 2006-07) declining from 41 in the year 2003-04 (Mehta 2008). The ratio may further decline to the desired level of 30 by the year 2011. Thus, we take two alternative values of STR for our arguments here, STR = 30 and STR = 40 to build alternative scenarios.

With all the seven parameters in our framework assuming values that are conservatively selected for our ultimate argument, we need to take the absolute estimate of GDP at current market prices for the year 2005-06 to complete all calculations of what is affordable. The GDP estimate is taken from the Government of India (2008) to be Rs 35.80 trillion.

Table 1 gives the total budgetary resource available to teach one child over one year in schools as per our estimates for a period extending up to 2021.

It is clear from Table 1 that per child availability of the school education budget is rapidly increasing over years in real terms in the country if 6% of GDP is earmarked for the budget of the education sector every year. Column 8 of Table 1 also indicates the per child budget availability if only 80% children are covered with the full budgetary support. Columns 7 and 8 in Table 1, therefore, provide the estimate of the maximum budget available per child for school education depending on the coverage. Applying our framework further, we now compute the salary that can be paid to schoolteachers. The estimates are presented in Table 2A (p 41). Since the salary of schoolteachers is specified separately for the primary and middle school, we compute these by assuming that teachers in the middle and secondary school classes would receive 20% higher salary compared to lower primary teachers.

Table 2A indicates that 6% of GDP as education budget cannot give a starting salary to primary schoolteachers, at the beginning of their career, higher than Rs 3,443 per month while a secondary schoolteacher cannot expect to earn more than Rs 4,132 per month, as gross salary,

in the year 2006. Against these budget constrained levels of feasible salary, the Sixth CPC has awarded salary scales to teachers, which is almost 285% higher in 2006, and 200% higher in 2011. Due to high growth in GDP, these budget constrained affordable salary levels could rise over years to reach Rs 12,390 in 2021 (in 2006 prices) for primary teachers, and Rs 14,868 for secondary school teachers, but then new pay commissions would announce newer and higher salary levels, ultimately maintaining the viability gap.<sup>1</sup>

To explore alternatives available to policymakers, we have adjusted the estimates of Table 2A under three alternative scenarios. In the first case, (Table 2B, p 41), the STR has been raised to 40 from 30. This raises the budget permissible salary levels of teachers, but at the cost of quality of education due to higher students per teacher. In spite of this, the feasible salary level remains equal to one-third of salary awarded by the Sixth Pay Commission. In the second case (Table 2C, p 41), it is assumed that the budget would be used to cover only 80% of eligible children, while the parents will cover the cost of 20% going to private schools. The salary that could be paid to teachers even under this assumption remains around one-third of the Sixth Pay Commission award. In the third scenario (Table 2D, p 41), we



## INDIAN INSTITUTE OF FOREIGN TRADE

(Deemed University under Deptt. of Commerce, Govt. of India)

### Centre for WTO Studies

IIFT is a premier institution of education, training and research in the area of International Business set up by Department of Commerce, Government of India.

With the object to provide continuous research and analytical support on all issues pertaining to the World Trade Organisation, Centre for WTO Studies was established in 1999 by Department of Commerce as a professional body that would provide research and allied inputs to the government for negotiations at the WTO as well as for other WTO mandated committees. Presently, the Centre for WTO Studies is functioning in the IIFT.

**Applications are invited for the following posts for Centre for WTO Studies :**

#### **CONSULTANT (AGRICULTURE) AT THE LEVEL OF ASSOCIATE PROFESSOR AND ASSISTANT PROFESSOR**

**Essential Qualifications :** Five years (for Associate Professor) and Three years (for Assistant Professor) experience of research on agriculture and trade issues. Applicant should have made a mark in the areas of scholarship as evidenced by quality of publications and contribution in the domain knowledge.

**Desirable :** Ph.D. with first class or equivalent (in terms of Grades etc.) at the preceding degree in the appropriate branch with a very good academic record throughout.

**Remuneration :** Negotiable

**Term of Appointment :** Initially for 3 years, extendable by another 2 years.

Please send detailed C.V. to Dr. L.D. Mago, Registrar, Indian Institute of Foreign Trade, B-21, Qutab Institutional Area, New Delhi-110016 (email: [ldmago@iift.ac.in](mailto:ldmago@iift.ac.in)) so as to reach him **latest by 26.06.2009**.

**Table 2A: Feasible Monthly Salary for Primary and Secondary Schoolteachers**

(with 100% children coverage and average student-teacher ratio of 30:1, in Rs per month)

Year	Available Education Fund/ Child/ Year (in Rs)	Gross Average Monthly Emolument Feasible/ Teacher (in Rs)	Gross Average Salary of Teachers/ Month	Career Start Average Salary Feasible	Feasible Career Start Salary for Primary@	Pay Commission Recommendation for Primary Schools	Feasible Career Start Salary for SS@	Pay Commission Recommendation for Secondary School
1	2	3	4	5	6	7	8	9
2006	5,874	9,545	6,818	3,788	3,443	13,042	4,132	15,996
2011	9,508	14,045	10,032	5,574	5,067	13,042	6,080	15,996
2016	15,042	22,221	15,872	8,818	8,016	13,042	9,620	15,996
2021	23,249	34,345	24,532	13,629	12,390	13,042	14,868	15,996

**Table 2B: With 100% Children Coverage and Average Student-Teacher Ratio of 40:1**

2006	5,874	12,727	9,091	5,050	4,591	13,042	5,509	15,996
2011	9,508	20,600	14,714	8,175	7,431	13,042	8,918	15,996
2016	15,042	32,591	23,280	12,933	11,757	13,042	14,109	15,996
2021	23,249	50,372	35,980	19,989	18,172	13,042	21,806	15,996

**Table 2C: With 80% Children Coverage and Average Student-Teacher Ratio of 30:1**

2006	7,342	11,931	8,522	4,735	4,304	13,042	5,165	15,996
2011	11,885	19,312	13,795	7,664	6,967	13,042	8,360	15,996
2016	18,803	30,554	21,825	12,125	11,023	13,042	13,227	15,996
2021	29,061	47,224	33,731	18,740	17,036	13,042	20,443	15,996

**Table 2D: With 80% Children Coverage and Average Student-Teacher Ratio of 40:1**

2006	7,342	15,908	11,363	6,313	5,739	13,042	6,887	15,996
2011	11,885	25,750	18,393	10,218	9,289	13,042	11,147	15,996
2016	18,803	40,739	29,099	16,166	14,697	13,042	17,636	15,996
2021	29,061	62,965	44,975	24,986	22,715	13,042	27,258	15,996

@ Salary of secondary schoolteachers is taken 20% higher than the primary schoolteacher on an average.

Source: For Column 2, Table 1; For the rest, see the text.

consider both the lenient assumptions of STR=40 and student coverage of only 80% by the government schools. Even with such relaxed assumptions, the salary affordable to the permanent regular teacher in the government schools works out only to 43% in 2006 and 70% in 2011 of the salary recommended by the Sixth CPC award.

The estimates of the feasible salary that can be paid to schoolteachers presented in Tables 2A, 2B, 2C and 2D have been made under very liberal assumptions of availability of education budget (at 6% of GDP), and very high share of the budget allocation (67%) for school education. The growth of economy too has been projected at an ambitious rate of 9% pa in real terms over a decade and a half. Thus, the education budget assumed in our estimates represents simply the upper limit of the government resource availability for the school education sector. If the economic growth turns out to be lower, and demands from other social sectors, like health, unemployment benefits, old age pension, etc, rise, resources available for the school education sector would be much lower than what we have assumed. As a result, the feasible salaries of the

schoolteachers would be substantially lower than what our estimates in Table 2 suggest. The other parameter values considered in our estimates are also conservatively selected to see whether the government schools can effectively deliver the universal schooling to all our children in the school-going age-groups.

Table 2 clearly demonstrates that under all reasonable scenarios, and maximal favourable assumptions, the feasible salary that can be paid to schoolteachers remains substantially less than the recommendations of the Sixth Pay Commission. Meeting the goal of universal schooling of all of India's children under an education budget of 6% of GDP is, therefore, not possible if all school education is through government schools and all the teachers are to be paid salary as recommended by the Sixth Pay Commission.

#### 4 Policy Implications

There are only three ways in which the government can pay to all teachers a salary recommended by the Sixth Pay Commission. First, the education budget can be raised much beyond 6% of GDP, to above 15% of GDP on a sustained basis. This is neither feasible nor practicable

under the given economic and fiscal constraints in India. Second, the government can keep the budget allocation at 6% of GDP, but then cover much less than the universal coverage of children under primary and secondary schools. The provisions of RTE will rule out this option. The political leadership in the country will rule out the possibility of reducing the government schoolteachers' salary significantly below the levels recommended by the Sixth Pay Commission either through hiring them on ad hoc basis or denying them the benefits available to permanent regular teachers for a longer time. The only remaining alternative, therefore, is to pursue the goal of universal school coverage through public-private partnership (PPP) in which low cost private providers of school education, who pay much lower teacher salary, cover a significant part of school education. As it happens, many studies have brought out that private/non-government schools can supply a reasonable quality of school education at almost 25% to 35% of the cost of government education (Pankaj Jain 1997; Tooley et al 2007; Vachani and Smith 2008). This happens because the salary of a schoolteacher in the private sector is almost 25% to 35% of the government salary as found by several studies (see for instance, Bajpai et al 2008a and 2008b).

The Education Guarantee Scheme (EGS) of Madhya Pradesh, Shiksha Karmi programme of Rajasthan and Alternative School (AS)/Centres under Sarva Shiksha Abhiyan (SSA) have all been funded by the government to provide education to disadvantaged communities. Although the teacher salary and per child budgetary allocation under these schemes was very low, they still managed to provide an education of quality comparable or better than that in regular government schools in many cases. There are many examples of good educational outcomes under such schemes and with minor adjustments in the norms, Alternative and Innovative Education (AIE)/SSA can be strengthened to ensure higher quality educational outcomes, at least comparable to or exceeding the educational outcomes in regular government schools.

A non-governmental organisation (NGO) education programme, Gyan Shala, in

**Table 3: A Feasible Scenario for Meeting Minimalist Educational Goals**

Year	Children in Government Schools (%)	Children in PPP Schools (%)	Children in Government Funded Schools (%)	Pupil/Teacher Ratio in Government Schools	Cost/Child in Government School	Cost/Child in PPP School	School Education Budget (Rs crore)	Education Budget as % of GDP	Share of School Education Budget for PPP
2006	29	10	39	40	18,575	3,600	1,40,104	6.02	6.26
2011	34	20	54	30	24,767	4,376	2,17,408	6.02	9.41
2016	43	20	63	30	24,767	5,319	2,66,419	4.79	9.08
2021	68	20	88	30	24,767	6,465	4,10,607	4.80	7.13

PPP stands for public-private partnership arrangement.

Gujarat, which is supported under the AS scheme of SSA, provides assured quality education to children from poor families and raises their learning levels on par with those who study in leading private sector schools. The programme is designed to be replicated as self-contained autonomous unit covering around 15,000 children, while spending around Rs 1,500 per child per year (for details, see [www.gyanshala.org](http://www.gyanshala.org)). If the programmes like Gyan Shala are permitted to act as feeder school to the government schools starting at grade 4 or 5, the government schools can almost double the money available per child studying in higher classes, which then can sustain the existing higher level of government

teacher salary. Promotion of programmes like Gyan Shala would require only minor tinkering with existing SSA policies. The RTE Act, therefore, needs to recognise this aspect explicitly and provide for the PPP in the primary and secondary school education sector.

### Possible Solutions

(A) One solution for meeting educational goals of India would, therefore, be a very large expansion of AS/AIE under SSA, after some improvements in the budget allocation to support higher education quality and setting up mechanisms to assess quality. This scheme should cover the bulk of primary education up to grade 4

or 5. The regular government schools could then focus on the education in grades 4-10. The salary of teachers and the cost of educating a child under AIE/SSA would be lower than the requirements indicated in our estimates in Section 3. This would allow the government to sustain higher teacher salary and per child cost in its regular schools for grades 4-10. An expanded AIE/SSA provision for grades 1-4 children (and not only out-of-school-children), coupled with the focus on existing government schools on grades 4 onwards, could help India meet its educational goals and also pay its regular government teachers the salary as per the Sixth CPC recommendations.

(B) Another alternative would be for the government to contract out the bulk of school education delivery up to grade 5 to private schools. A study by Tooley, Dixon and Gomthi (2007) showed that children in such schools in Hyderabad scored almost one sigma higher than the average test score of children in government schools. It is, therefore, not at all an

**Book AD ½ page**

inferior solution. It would enable proportionately higher amount of budget to be allocated to higher classes, and make the government to play a more active role in the schooling of higher grades, the bulk of which is currently left to private sector providers.

In Table 3 (p 42), we have computed a scenario of PPP that would allow universal school coverage within the realistic budgetary provisions for school education. It assumes an STR of 40 in the base year 2006 and STR of 30 in the future years of 2011, 2016 and 2021. Moreover, we begin with the low coverage of students in the government-funded schools in 2006 and gradually increase it in a feasible way ensuring maximum coverage keeping the low cost government-funded private schools to not more than 20% in the partnership. It is consistent with either of the above two ways (A or B) of the PPP models and, therefore, can be implemented by the government if the RTE Act provides for them.

It can be seen from Table 3 that in our suggested solution, the share of the budget provided for PPP would keep falling from about 9.4% in the year 2011 to 7.1% in the year 2021 even when the children covered by the government-funded private schools remain 20% in all these years. Our calculations suggest that the coverage ratio in the government-funded schools would rise from the current level of 39% to about 88% in the year 2021. We have deliberately kept the budget allocation for the education sector at about 4.8% only in the years 2016 and 2021. This is because the past experience suggests expectation of another round of revision of teachers' salaries by that time. With the expected revision of salaries, the provided 4.8% budget would become 6%, assuming a real revision of about 25%.

Both the alternatives A and B, presented above, are not effectively included in the proposed RTE Act. Since these are perhaps the only possible solutions, the RTE Act as proposed seems to be infeasible and impractical. If passed in its present form without modifications, it will become one more illustration of "a right" granted on paper but violated in practice! Some education experts have opposed the expansion of government funding for AS/AIE

scheme and for any PPP based on low cost schooling as inherently iniquitous and against the poor (GOI 2005 and Kothari Commission 1966). However, now there exists credible evidence that both AS/AIE funded non-government schools and private schools provided better quality education than the average government schools (Tooley et al 2007). Moreover, the majority of government-funded high school education in India is already in the form of PPP, under the government aided school system. Hence, such objections to the suggested solutions may not be taken seriously.

Another objection to our arguments and estimates can be in terms of their incompatibility with "official estimates" of resource requirements for universal school education, made by the Saikia Committee (GOI 1997) and Tapas Majumdar Committee (GOI 1999). In fact, none of these committees, as pointed out in Section 1, has taken teacher salary anywhere close to what has been recommended by the Sixth Pay Commission, whereas we have considered this aspect explicitly. Our analysis, therefore, is not contrary but complementary to the analysis of these committees. An independent assessment of resource requirement by the Earth Institute-IIMA collaboration (Bajpai, Dholakia and Sachs 2005, 2008a and 2008b) had actually projected a large use of low salary teachers for meeting the universal school coverage goal, we are proposing the same solution here.

Implementation of any of the above two alternatives would require finding new solutions about quality control, equity and access, and introducing institutional reforms that would make either of these approaches consistent with (and serve) national educational goals. It would be a challenging task, but then, solving the problem of India's education sector cannot be easy.

#### NOTE

- 1 In our analysis, we have taken the number of children to be covered under school programme over a 10-year age interval, to conform to the recommendations of the Tapas Majumdar Committee that recommends that the government must support high school education, and also because this is the least number of years of education that is supported by the government in any country in the world that spends close to 6% of GDP on education.

#### REFERENCES

- Bajpai, Nirupam, R H Dholakia and Jaffrey D Sachs (2005): "Scaling Up Primary Education Services in Rural India", CGSD Working Paper No 28, November, The Earth Institute (NY: Columbia University).
- (2008a): "Scaling Up Primary Education in Rural India: Public Investment Requirements and Policy Reform, Case Studies of AP and Karnataka", CGSD Working Paper No 34, January. Available at <http://www.earthinstitute.columbia.edu/cgsd/workingpapers2008.html>
- (2008b): "Scaling Up Primary Education in Rural India: Public Investment Requirements and Policy Reforms, Case Study of Tamil Nadu", CGSD Working Paper No 35, November. Available at [http://www.earthinstitute.columbia.edu/cgsd/documents/rural%20Education%20Tamil%20Nadu\\_o8.doc](http://www.earthinstitute.columbia.edu/cgsd/documents/rural%20Education%20Tamil%20Nadu_o8.doc)
- Education Commission (1966): *Education and National Development* (New Delhi: Ministry of Education), (Also known as Kothari Commission).
- Government of India (1997): *Report of the Committee of State Education Ministers on Implementation of the Proposal to Make Elementary Education a Fundamental Right* (also known as Saikia Committee Report of 1996), Department of Education (New Delhi: Ministry of Human Resource Development).
- (1998): *National Policy on Education 1986*, Department of Education (New Delhi: Ministry of Human Resource Development).
- (1999): *Expert Group Report on Financial Requirements for Making Elementary Education a Fundamental Right* (also known as Tapas Majumdar Committee Report of 1999), Department of Education (New Delhi: Ministry of Human Resource Development).
- (2005): *Report of the Central Advisory Board of Education (CABE): Committee on Free and Compulsory Education Bill and Other Issues Related to Elementary Education*, June (New Delhi: Ministry of HRD).
- (2005): *Rights to Education Bill 2005 (Drafts)*, (New Delhi: Ministry of Human Resource Development). Available at, [www.education.nic.in/elementary/RighttoEducationBill2005.pdf](http://www.education.nic.in/elementary/RighttoEducationBill2005.pdf)
- (2008): *Economic Survey 2007-08*, Economic Division (New Delhi: Ministry of Finance), February.
- Jain, Pankaj (1997): "Program Success and Management of Primary Education Programs in Developing Countries", *World Development*, Vol 25(3): 349-58.
- Jha, Praveen, Subrat Das, S S Mohanty and S N K Jha (2008): *Public Provisioning for Elementary Education in India* (New Delhi: Sage).
- Mehta, Arun C (2005): *Elementary Education in India*, Analytical Report 2004 (New Delhi: NIEPA).
- Premrajan, Rao E M and L Gurusathan (2007): *A Study of Estimating Cost to Government for a Government Employee*, XLRI study sponsored by the Sixth CPC. Available at [http://india.gov.in/gov/studies/xlri\\_compensation.pdf](http://india.gov.in/gov/studies/xlri_compensation.pdf)
- Srikrishna B N, Ravindra H Dholakia and Sushama Nath (2008): *Report of the Sixth Central Pay Commission* (New Delhi: Government of India), March.
- Tooley, James, Pauline Dixon and S V Gomathi (2007): "Private Schools and the Millennium Development Goal of Universal Primary Education: A Census and Comparative Survey in Hyderabad, India", accepted for publication in *Oxford Review of Education*.
- Vachani, Sushil and Craig N Smith (2008): "Socially Responsible Distribution Strategy for Reaching the Bottom of the Pyramid", *California Management Review*, Vol 50(2).
- UNESCO: Key Statistical Tables on Education: Finance Indicators Table, UIS, UNESCO. Available at [www.uis.unesco.org](http://www.uis.unesco.org)