

43rd Annual Conference of the Indian Econometric Society (TIES)  
Indian Institute of Technology, Mumbai 5-7, January, 2007

## Secondary Education in India: Development and Performance

P. Geetha Rani

Assistant Professor,  
National University of Educational  
Planning and Administration,  
17-B, Sri Aurobindo Marg,  
New Delhi 110 016.

### *Abstract*

*A review of development of school education in India reflects an expansionary phase of number of institutions and students enrolled especially in secondary education. Even, with this quantitative rise in enrolment, only 39 per cent of the eligible age-group children were enrolled in secondary education in 2003-04 unlike many developed and developing nations where secondary education is almost universal. The extent of effectiveness of secondary education delivery is categorically reflected as only 14 per cent of the enrolled complete the secondary schools effectively i.e., by passing out in the board examinations in 2003-04.*

*Further, the paper examined the inter-state variations by constructing an educational development and performance indices at two points of time. And compared their movements from the 1990s to 2000-01/2003-04. It finds that the same set of four states Bihar, Uttar Pradesh, Rajasthan and Madhya Pradesh are the poor scorers at both indices at secondary level even though Rajasthan and Madhya Pradesh have improved their enrolment ratios at upper primary levels at both points of time. Besides Kerala, around six states viz, Haryana, Maharashtra, Andhra Pradesh, Punjab, Himachal Pradesh and Karnataka achieve noticeably higher scores on both indices especially during 2003-04. Then the paper also makes an attempt to decipher various factors responsible for low performance in the indices by looking at the demand and supply side factors.*

## Secondary Education in India: Development and Performance

*'Secondary Education is the real weak spot in our entire educational machinery'*

The Report of the University Education Commission (1950, reprinted in 1983, p.55)

*'As countries make strenuous efforts to achieve universal literacy and primary education for all, while at the same time expanding and improving the quality of their system of tertiary education, for many nations secondary education has become the weakest link in the education chain'*

*Maclean (2001: p.39)*

### I. Introduction

Secondary education gains importance in developing countries for a number of reasons. The rapidity at which the developing countries achieve universal elementary enrolment would generate direct demand for secondary education. As the UNESCO *World Education Report* (2000) on 'The right to education' clearly demonstrates, primary education has expanded significantly in many developing countries since the 1950s, and this has resulted in a significant increase in gross enrolment in secondary education. However, as access to secondary education has expanded, its overall quality has often been on the decline due to over-stretched resources combined with less efficient systems.

In addition, indirect demand for secondary education is generated due to the increasing demand for highly skilled labour force in the global economy. It is because, the secondary graduates as a labour force are trainable for the requirements of the globalised market. Further, effective secondary schooling introduces them to formal reasoning, abstract problem solving skills and critical thinking as well as its occupationally relevant content. Secondary education promotes the development of a skilled and knowledgeable citizenry with access not only to the national but also to the global economy (Lewin and Caillods, 2001). For faster economic growth, it is not sufficient to exclusively concentrate on primary education. It is evidenced that early expansion of, and public investment in secondary education paid rich dividends in East Asia (World Bank, 1993, Tilak, 2001). Hence, secondary education is crucial for economic growth.

Also, investment in secondary education yields considerable social and private returns, offering young people the chance to acquire attitudes and skills which in turn enables youth to develop job-oriented skills, participate fully in society, take control of their own lives, and continue learning (Alain and Tan, 1996; Lewin and Caillods, 2001; Duraisamy, 2002). Secondary education has more significant effect on the redistribution of income, growth and reducing poverty than primary education (Tilak, 1989, 2005).

Secondary education provides an indispensable link to the whole education that forms the inter connectivity to the higher education system, by providing the required input. Indeed, primary and secondary schooling is considered as ‘successive phases of a continuing process’ and should be made available to all children. Throughout the world this view has been increasingly accepted that education is a continuing process from childhood to adulthood (UNESCO, 2000). It clearly emerges that elementary or basic education is just the first phase of a continuous process that can and ought to extend through everyone’s lifetime. In majority of the developed (Germany, Australia, Canada, U.K., etc) and also in developing countries (China, Costa Rica, Kazakhstan, etc), the duration of compulsory education extends to lower or even higher secondary education.

Article 5, 13 and 14 of the International Covenant on Economic, Social and Cultural Rights (1966) aptly states “Secondary education in its different forms, including technical and vocational secondary education, shall be made generally available and accessible to all by every appropriate means”. On similar lines, Article 28 of the Convention on the Rights of the Child (1989) stresses encouraging different forms of secondary education<sup>1</sup>. It emerges that secondary education is acquiring the pure public good nature of education. Following this, secondary education enrolment has been already universal among many developed and industrialized nations (see Table 1).

Table 1  
Gross Enrolment Ratios in Secondary Education in Selected Countries in 1998/99 and 2002/03

	1998/99	2002/03		1998/99	2002/03
World total	60	65	Developing	52	58
Developed	100	107	China	70	70
U.S.A	97	94	India*	32	37
Canada	105	105	Indonesia	51	61
U.K.	157	179	Philippines	76	84
Australia	155	154	Malaysia	69	70
Japan	102	102	Mexico	69	79
Korea	100	91	S Africa	90	88

Source: UNESCO (2006); \* Education in India, 1998-99 and Selected Educational Statistics, 2002-03

It is because reforms in OECD countries during the early 1970s led to lower secondary education becoming compulsory and a part of basic education. Further, compulsory schooling age was set at 5-16 years during 1980s. The general focus was on improving the quality and relevance of education during the early 1990s, and redefining the role and responsibility of public education in the knowledge-based economy (Bregman, 2003). Even though universalizing secondary education has been the very recent discussion in India (GoI, 2005), they are not yet on the

pipeline. However, the degree of importance assigned to and resources available for secondary education to a large extent depends upon whether the countries or regions have attained universal or near universal elementary enrolment. In accordance with their level of achievement in elementary education; the demographic profile of the country – composition of both elementary and secondary age group population, rate of growth of population; socio-economic development of the country; and the resources available for education in general and the commitment of the state and its resources for education in particular would determine the significance assigned to secondary education.

Though secondary education forms an integral part in the development of the entire education system, very few studies have examined the related issues and problems on growth of secondary education<sup>ii</sup> in India. Recently, World Bank (2003) has come out with a policy note, looking at the aspects of planning, administration, quality improvement and financing of secondary education in India. However, the present study examines the development and performance of secondary education in India and across seventeen major states in India. The study examines secondary education in a holistic perspective examining secondary education with a backdrop on elementary levels of education.

In India, the national pattern and trend might disguise the disparities across various states. Indeed, vast heterogeneity is mirrored by large differences in the development of education among states. It is because the educationally backward states have lower enrolment vis-à-vis lower physical and human resource investment than their counterparts. Besides, education is a concurrent subject and state responsibility. Further, states contribute majority of the expenditure at all levels of education, including secondary education. Hence, it is equally important to examine the inter-state variations. In examining the inter-state variations of the two important dimensions that is development and performance of secondary education is attempted by constructing an Educational Development Index and an Educational Performance Index.

Accordingly, section I of the paper gives a brief introduction to the development of education and section II explains the methodology adopted in the study. Section III covers a wide range of issues relating to the growth of the secondary education system –covering the expansion or system size including the access in terms of gross enrolment ratios. The performance of secondary education has been addressed by examining the transition, drop-out and completion rates in secondary education in section IV. Given the development and performance of secondary education at the national level, section V examines the inter-state variations by analyzing the

gross enrolment ratios and the educational development and performance indices across 17 major states. The final section makes an attempt to identify the multiple factors responsible for the problem areas in secondary education development. However, an important limitation of the study is that it has not examined the development of secondary education by type of management of education.

## **II. Methodology**

UNDP's pioneering effort on its annual Human Development Reports since 1990 has played a significant role in drawing attention to the importance of human development as opposed to narrowly conceived economic development. Since then series of reports have estimated Human Development Index in India both at national or regional levels [GoI, 2002, NCAER, 1999; 2001; 2002; 2003; 2004] covering all states or a group of states or specific State Human Development Reports in as many as 13 states focusing on districts [Government of Assam (2003); Government of Himachal Pradesh (2002), Government of Gujarat (2004), Government of Madhya Pradesh (1995; 1998, 2002), Government of Maharashtra (2002); Government of Nagaland (2004), Government of Orissa (2004), Government of Punjab (2004), Government of Tamil Nadu (2003), Government of Karnataka (1999), Government of Rajasthan (2002), Government of Sikkim (2002) and Government of West Bengal (2004)], besides a number of studies by individual researchers (Shiva Kumar, 1991, Prabhu and Chatterjee, 1993 Malgavakar, 1994, Vyasulu and Vani 1997, Rani, 1999).

Besides these human development reports and studies, vast amount of literature identify education as the most significant variable (in influencing not only the economic development but also for human development in India and elsewhere). All these studies look at education as a crucial factor in determining the development process. But, the development of rather education focusing secondary education in India is rarely examined. The present study is a modest attempt in this direction focusing on development and performance of secondary education in India.

The paper adopts the same method of calculating the Human Development Index as that of UNDP's. Even though the concept of human development, in the present context education development, is much deeper and complicated than what can be captured in any composite index or even by a set of statistical indicators. It is because besides, various measurable factors, there are a number of qualitative inputs that facilitate in the development of education. Yet, it is useful

to simplify a complex reality. HDI is a weighted average of income, education and health. It is of the form comparable over time and across countries. It is expressed as

$$Z_{ijt} = \frac{[\text{Actual } X_{ijt} \text{ Value} - \text{Minimum } X_{ijt} \text{ Value}]}{[\text{Maximum } X_{ijt} \text{ Value} - \text{Minimum } X_{ijt} \text{ Value}]}$$

Where  $X_i$  refers to longevity, knowledge and income (UNDP, 1991). The subscripts  $j$  and  $t$  stands for states and time period respectively. UNDP's HDI sets a minimum and maximum for each dimension and then show where each country stands in relation to these scales. It is expressed as a value between 0 and 1. It is important to note that the denominator remains constant, which also gives the index a dynamic quality – a measure of movement towards desired objective. HDI does not measure absolute levels of human development rather assesses the relative position of a country. In a nutshell, it ranks countries in relation to each other; according to how far they have come from the lowest levels of achievement and how far they will have to travel towards the present highest level of achievement on each of the three indicators. It is important to note that this methodology has also various caveats (for details see Rani, 1999).

#### *Education Index:*

Index of education is used by the Human Development Reports for estimating its human development index. Index of education consists of a weighted index of literacy level ( $2/3^{\text{rd}}$ ) and mean years of schooling of population ( $1/3^{\text{rd}}$ ). However, the HDRs (1990, 1991) have incorporated education by including only the literacy level. Since 1995, the mean years of schooling has been replaced by combined gross enrolment ratios of primary, secondary and tertiary enrolment ratios. The national human development report assigns different weights *i.e.*, literacy rates with 0.35 weights and 0.65 weight to the adjusted intensity of formal education in years. This is nothing but mean years of the enrolled students from class I to XII (GoI, 2002). State reports have assigned the same two-third weights to literacy rates. While little variation can be found in the enrolment ratios / mean years of schooling depending the education development of the individual states. For instance, the educationally backward states have used the combined gross enrolment ratios of elementary education, viz, Orissa, Rajasthan, Madhya Pradesh, Assam including Gujarat. Indeed, even Maharashtra also used mean years of schooling up to elementary level. Worse, few of the states like West Bengal and Punjab used gross enrolment ratio at primary level. On the other end, states like Tamil Nadu, Nagaland, and Sikkim used combined gross enrolment ratios from primary to higher secondary level. States like Himachal Pradesh and Karnataka used gross enrolment ratios from primary to secondary levels of education. But it is only one of the three components in HDI and is not a comprehensive educational development index.

However, there have only been few efforts in the educational development literature to show precisely the educational development in a country and also for the purposes of inter state differences. In the Indian context, Tilak(1979) developed a composite educational development index (EDI), using enrolment and institutional cost data as weights during 1974-75. The paper presents two sets of indices, viz the constant cost weighted index and varying cost weighted index of educational development for all the states in India. However, the indices developed are narrow in its coverage that only two dimensions (enrolment and cost) of educational development has been considered. Later, Tilak (1999) analysed the inter-state variation in stock and flow of human capital in India by using various indices such as Gender disparity index or Sopher's index<sup>iii</sup>, Index of deprivation in literacy, besides other aspects of educational development and financing. The paper brings out the various issues on investment on education and an overall situation of education in India across states using different indices. A single index that can comprehend the educational development would be preferable.

#### *Educational Development Index*

Following UNDP's methodology, an attempt is made here to construct an educational development index. This index uses three crucial indicators, viz, enrolment, institutions and teachers. The choice of these three critical inputs for education entails both demand for (enrolment) and supply of (institutions and teachers) secondary education. Development of secondary education can not be seen in isolation as it has both forward and backward linkages with other sectors of education especially the lower levels of school education.

Hence, the structure of enrolment, institutions and teachers are used. Structure of enrolment implies for instance the share of primary enrolment in the total enrolment at school education. The same is applicable to institutions and teachers. The advantage of using the structure as an indicator variable is that the absolute numbers or the growth rates at the secondary level may not necessarily indicate the development or the relative position of the states in terms of elementary education. Educational Development Index is estimated at two points of time, 1990-91 and 2003-04 focusing on secondary level of education, as there is no comparable and consistent information available at the higher secondary level (see Appendix Table A1).

#### *Educational Performance Index*

In addition to the educational development index, an attempt is made further to construct an educational performance index. Unlike, the development index, performance index includes four

critical indicators. Among the four indicators, two of them, transition rate from upper primary to secondary education and Drop-out, which is a cumulative drop-out rate from class I to X, relate themselves with elementary levels of education. These are the process or intermediate indicators. The other two indicators, the percent of appeared students (in Secondary Board Examinations) to the enrolled and percent of students passed out in the appeared relate exclusively to secondary education. These two correspond to outcome indicators. Educational Performance Index is estimated at two points of time 1991-92 and 2000-01 at secondary level, as there is no comparable and consistent information available at the higher secondary level (see Appendix Tables A3 and A4).

In the present study, secondary education refers to the general secondary education covering class IX and X generally referred as lower secondary or secondary and class XI and XII as higher secondary levels of education.

### **III. Secondary Education Development: The Prospects**

The network of the education system in the second highest populous country is ranging from 664040 primary, 219620 upper primary educational institutions at the elementary level to 254 universities including deemed universities and institutions of national importance in the higher education system. Such a network of institutions had been developed over a long period of time and also one of the largest networks in the world. During the year 2001-02, these educational institutions enrolled 113.88 million students in primary, 44.83 million in upper primary and 0.42 million students in higher education. In between the elementary and higher levels of education, secondary educational institutions in the country were 133492 institutions and the enrolment were 30.5 million during 2001-02.

Achievement in basic education is a pre requirement for the growth of secondary education, besides various other factors such as access, availability, affordability, etc. Achievement in basic education in terms of expansion of educational institutions and teachers and participation in terms of enrolment in the five decades is quite commendable as could be seen from Table 2.



Table 2  
Growth of Educational Institutions, Enrolment and Teachers by Levels of  
School Education in India

	Institutions (in '000s)			Enrolment (in millions)			Teachers (in '000s)		
	Primary	Middle	Sec*	Primary	Middle	Sec*	Primary	Middle	Sec*
1950-51	209.7	13.6	7.4	19.3	3.1	1.5	538	86	127
1960-61	330.4	49.7	17.3	34.9	6.7	3.4	742	345	296
1970-71	408.4	90.6	37.1	57.1	13.3	7.6	1060	638	629
1980-81	494.5	118.6	51.5	73.8	20.7	11.0	1363	851	926
1990-91	560.9	151.5	79.8	97.4	34.0	19.1	1616	1073	1334
2000-01	638.7	206.3	126.0	113.8	42.8	27.6	1896	1326	1761
2003-04	712.2	262.3	145.9	128.3	48.7	35.0	2097	1592	2024

\* includes high/ higher secondary /Intermediate/ pre-university/ Jr.college /pre-degree levels

Source: Selected Educational Statistics, various issues

Expansion of institutions at the primary level has been three folds and teachers by four folds and enrolment in primary education has grown at a much faster level at about seven folds. Upper primary education is grown tremendously by 19 times in terms of both institutions and teachers, and little lesser about 16 times in terms of enrolment during the same period. Secondary schools and teachers have also grown equally that of upper primary schools by 19 times and 16 times respectively but enrolment have increased at a much faster rate by 23 times from 1950-1 to 2003-04 (see Table 2). Even though growth in secondary education in the post independence period is quite impressive, the pattern of growth indicates an uneven pace of growth between institutions and enrolment leading to crowded classrooms especially at upper primary and secondary levels.

Within secondary educational institutions, two third of the schools were secondary and the rest were higher secondary schools. This is an improvement over the trend of 75 per cent of the schools being high schools and the rest 25 per cent being higher secondary schools for more than a decade from 1980-81 to 1996-97. This indicates that on an average for every higher secondary school, 2 to 3 feeder high schools exist. This may also result in crowded classrooms at higher secondary level depending upon transition rates. Further, growth rates of high schools during the last two decades are less than higher secondary institutions (see table 3).

Table 3  
Secondary Educational Institutions and Students Enrolled and Teachers in India (in %)

	Institutions			Enrolment			Teachers			
	High School	Hr. Second	Sec. Schools \$	High School	Hr. Seco	All*	All\$	Female Teacher	Trained Teachers	PTR
1980-81	76	24	51.57	74	26	11.0	926	28	88	28
1985-86	75	25	66.83	62	38	16.5	1132	30	92	32
1990-91	76	24	79.79	60	40	19.1	1334	31	90	33
1995-96	72	28	99.27	60	40	22.9	1549	33	91	33
2000-01	69	31	126.08	66	34	27.6	1761	33	90	32
2003-04	68	32	145.96	66	34	35.0	2024	38	90	33

Note: \* in millions; \$ in thousands.

Source: Based on Selected Educational Statistics, various years.

With regard to enrolment, the share of high school enrolment is two third and the rest in higher secondary enrolment in 2003-04, which remained the same even in 2000-01. Indeed, the shares of secondary enrolment declined drastically from 74 to 60 percent during 1980-81 to 1995-96 which is an encouraging trend as more number of students go up to higher secondary level. But this declining trend however increased again. This also indicates crowded higher secondary schools, by looking at the enrolment.

Teachers form a vital input in the education development. The secondary education system has 2.13 million teachers in 2003-04, which was an improvement from less than one million teachers in 1980-81. Trained teachers at secondary level were almost stagnant around 90 per cent from 1980s till 2003-04. The average number of students per teacher in secondary education was no better as it increased from 28 to 34 during the same period (see table 3).

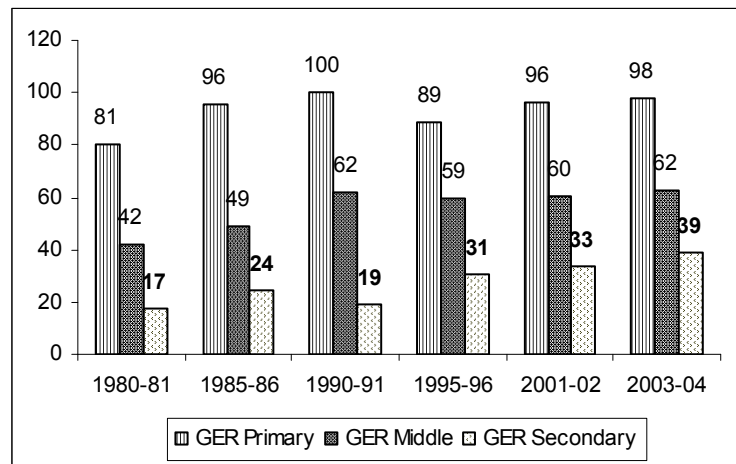
The growth of the system in terms of institutions, enrolment and teachers may be on account of a multiple set of inter-related factors. One, the general demand increased due to the overall rise in the enrolment at elementary levels of education. This thrust towards achieving universal elementary education combined with no restrictions to get into secondary schools could be another contributing factor. Indeed, there has been an enormous rise in the social demand for education. Public policies play a vital role in the development of nations. Following the recommendations of the National Policy on Education (1986), the uniform pattern of higher secondary system was introduced across various states in the country. The implementation of this recommendation took almost more than a decade across major states in the country. Despite the long implementation lag, this pattern has improved the access and continuity in the schooling.

The rise in the share of the population shifting into the service sector leading to overall higher per capita income in the country is being reflected in the growth of and demand for secondary education. General awareness of the social and economic benefits of education and also education increasingly recognized as a powerful weapon for social identity and mobility across several sections of the society gave an impetus for the higher growth and demand for secondary education. Further, the fast changing ICT revolution has created the indirect demand for secondary education.

### Gross Enrolment Ratio

Growth viewed in number of secondary schools, enrolment and teachers in the secondary education system would indicate only the growth of increments to the existing system. A better indicator would be the enrolment ratio<sup>iv</sup>, which estimates the number of children enrolled in a particular level of education among the child population of that age group. Growth in gross enrolment ratios in primary education depicts one slump during the beginning of 1990s and improved to almost 100 per cent by 2003-04 (see Chart 1).

Chart 1  
Growth in Gross Enrolment Ratios in School Education in India



Source: Based on Selected Educational Statistics and Education in India, Vol.I, (S), 1995-96. Selected Educational Statistics, various issues

While upper primary level has enrolled around 50 per cent of the eligible age group population during 1980s and this has improved to around 60 per cent of the eligible age group population since the middle of 1990s. It is to be noted that the gap between GER in primary and upper and primary has been growing since the late 1990s. The improvised GER in primary and a stagnant GER in upper primary may be on account of the immediate focus on achieving the targets of universal primary education through the programmes such as DPEP. However, since 2001 the

programme Sarva Shiksha Abhiyan covers primary and upper primary levels of education. At the secondary level, the increase in gross enrolment ratios had been modest from 17 per cent during 1980s to 39 percent in the new millennium of 2003-04. Over more than two decades, the GER has not even touched to 50 percent enrolment ratios in the country. The progress seems to have been very low and fluctuated between 1980-81 and 1995-96. But from 1995-96 onwards, secondary enrolment ratios have been improving.

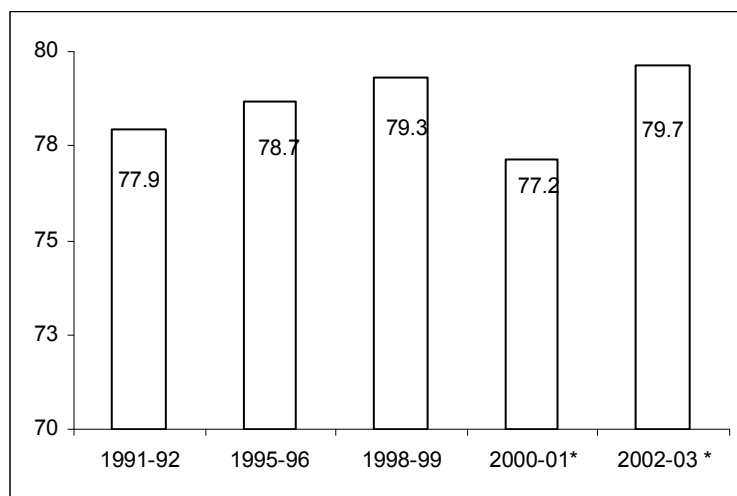
#### **IV. Secondary Education: The Performance**

Growth or development of secondary education cannot be looked at in terms of institutions, enrolment and teachers or even the gross enrolment ratios. Besides growth and expansion, another equally important aspect is how effectively the secondary education delivers. Indeed, a meaningful way of looking at is whether they have also performed well or not. Hence, it is equally important to examine the inputs by linking with the final outcomes. In the present study, the process, intermediate and outcome indicators in the development of secondary education has been discussed in terms of examining the transition rates, drop out rates and completion rates in secondary education respectively.

##### ***Transition Rates***

Transition rate refers to percent of students joining from one level to the next level of education. Here, in the present study, transition rates indicate how many students are enrolled at the secondary level out of the total enrolment at elementary level. The extent of transition rate to secondary level would reflect the demand for secondary education, besides the quality and performance at the elementary levels of education. The transition rate shows that 80 per cent of those who are enrolled at elementary level (class/grade VIII) go to secondary education in 2002-03 (see Chart 3).

Chart 3  
Transition Rates from Upper Primary to Lower Secondary Levels of Education in India



Note: 2001-02 and 2002-03 estimated using the repeaters in 1998-99 as per Education in India 1998-99

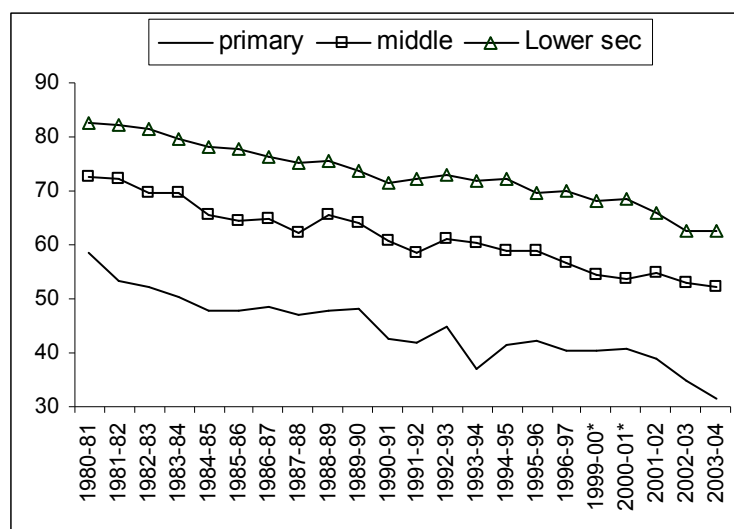
Source: Education in India, 1995-96, 1996-97, 1997-98 and 1998-99,

During the last decade, the transition rates have remained stagnant. Indeed, it marginally declined in 2000-01 and increased to the previous level of 1998-99 in 2002-03. Even though secondary enrolment had increased during the same period, but no such improvement is visible at transition rates. Besides, transition rates, another grave problem is the drop-out rates.

### ***Drop-out Rates***

The ability of an educational system to minimise the number of dropouts is a strong indication of its development and growth. Drop-out rates<sup>v</sup> is a major problem in elementary education, more so at the middle level (see Chart 4). It may be noted these are cumulative drop-out rates. Even in the beginning of the new millennium, the gap in drop-out rates between these two levels of education remained stagnant, indicating lack of serious initiatives to reduce the gap within elementary education. With drop-out rates ranging to around 60 per cent even in upper primary level, enrolment, by itself, loses its meaning, except as a frame of reference (see Chart 4).

Chart 4  
Trends in Drop-out Rates in School Education in India



Source: Education in India, Vol.I. (S), 1995-96 and Selected Educational Statistics, various issues; \* provisional

Smaller gap between upper primary and high school suggests that if children are able to complete elementary levels of education, the chance for them to enter into secondary education is marginally better than in the case of movement from primary to upper primary levels. In about 30 per cent of eligible age group population enrolled, only 30 per cent of the students were retained in schools in 1995-96, while the completion rate at lower secondary level was only 14 per cent in

1995-96 (NSSO, 1998). Rising enrolments are accompanied by high rates of drop-out. On an average, almost two third of pupils drop-out, which wastes valuable human, physical and financial resources.

### Completion Rates

Completion rate in secondary education is an important indication of successful education. Completion of secondary education is considered as the minimum requirement for successful labour market entry for employment in a modern economy and building the foundation for an expanded and diversified tertiary sector. Further, it allows for access to higher learning and training opportunities. Indeed, it is a minimum requirement for taking part in a global knowledge economy. Although there has been progress in expanding access to schooling, the problems of performance are huge.

Completion rates in high schools is analysed by looking at the proportion of students appeared among the enrolled and proportion of successful students in the students appeared for the Board Examinations<sup>vi</sup>. In the previous two decades, the students who appeared among the enrolled have improved from 22 per cent to 62 per cent from 1981 to 2000 (see table 4).

Table 4  
Percentage of Students Appeared and Passed in High and Higher  
Secondary Levels by Gender in India

	% of Appeared in the Enrolled			% of Passed in the Appeared Students		
	Boys	Girls	Total	Boys	Girls	Total
	Secondary					
1981	22	17	22	49	58	53
1985	32	23	29	48	55	51
1990	38	24	34	47	58	50
1995	35	26	33	49	57	54
2000	63	61	62	50	54	51
	Higher Secondary					
1981	23	17	23	52	60	56
1985	28	21	29	48	62	52
1990	28	25	27	51	62	54
1995	23	22	25	51	62	58
2000	23	21	22	56	66	60

Source: Calculated based on Selected Educational Statistics, Results of High School and Higher Secondary Examinations, various issues.

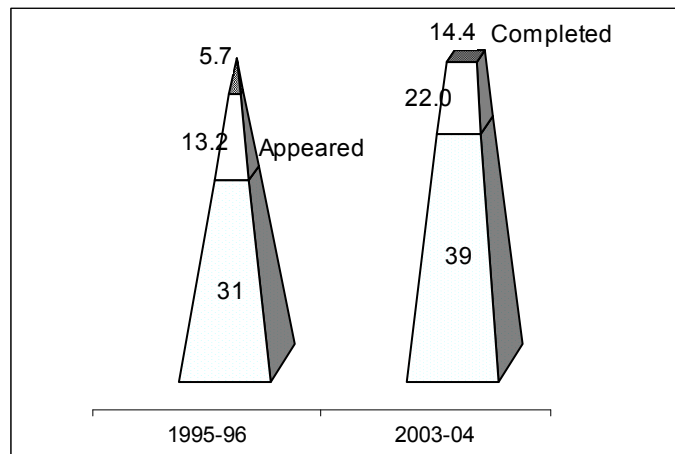
For every ten enrolled students in high schools only six students appeared for the board examination in 2000. However, among those who appeared, the passed out proportion of students varies from 50 to 54 per cent during the two decades. The rest of the 50 per cent non-successful students are not immediately eligible to enter higher secondary schools. These non-successful students along with those dropped-out from the lower secondary level would join the army of the

unskilled labour force due to their lack of adaptability to any training even as semi-skilled workers.

With regard to the completion rates within higher secondary schools, the percentage of students who appeared among the enrolled has ranged between 22 and 29 during 1981 to 2000. Among those who appeared, the passed out proportion of students vary from 52 to 60 per cent. In the latest year, the percentage on passed students has increased considerably (see table 4). However, students who passed with first division marks constitute a mere 16 per cent of the total passed students in 2000. The percentage of passed students in higher secondary level is better compared to the percentage of successful students in high schools. It may be due to the fact that the system of board examination at high school level had already filtered the students with low levels of competencies. Hence, only the better performing students enter the higher secondary schools. Yet the passed percentages in the higher secondary system need to improve to a much higher level. Further, it needs to be noted that these non-successful students may not be able to compete for the entry into the higher education institutions and also compete with ease for acquiring any formal training skills.

While examining the prospects and problems of secondary education commencing from gross enrolment ratio to the successful students reveal that a mere 5.7 per cent was the successful students from the relevant age group in 1995-96. However, this percentage has improved in the recent period to 14 per cent in 2003-04 (see Chart 5).

Chart 5  
Children Enrolled, Appeared and Completed in Lower Secondary Education in India



Source: Based on Education in India, NSSO (1998), and Results of High School and Higher Secondary Examinations, MHRD, Selected Educational Statistics, Department of Education, Planning, Monitoring and Statistical Division, New Delhi; Date corresponds to the year 1995-96 and 1998 and 1999.

The steepness of the pyramid from a broad base (GER) and a narrow top (passed out students) indicates the extent of effectiveness of secondary education in the country. It is skewed with a relatively broad base of GER and a very narrow top (few students) successfully completing the secondary education cycle. The challenges in the secondary education system are rather multiple, i.e., on expanding access and simultaneously improving the effectiveness in terms of especially arresting drop-out rates and improving the completion rates.

### Inter-State Variations

A great deal of variation exists in the educational development across states. In the continuum, at one end, we have Bihar with the lowest literacy rates (47 percent in 2001 census) and on the other Kerala with near 100 percent literacy rates (91 percent in 2001 census). Few states, especially Himachal Pradesh and Tamil Nadu, exhibit outstanding success in educational development within a short time span. Himachal Pradesh is one of the educationally developed states after Kerala, Goa and Maharashtra in terms of literacy rates according to the 2001 census. The progress in educational development is a recent phenomenon in these states since the 1980s, and it progressed at a much faster rate than other states. Similar improvements can also be noticed among Rajasthan and Madhya Pradesh. Hence, it is worthwhile to look at the inter-state variations in secondary education development and performance.

### Gross Enrolment Ratios

At the national level, there is no improvement over the gross enrolment ratios at upper primary level from 1990-91 to 2003-04, the latest year for which information is available. But the relative position of states varies at a great deal (see Table 5 and Appendix Table A2).

Table 5  
Distribution of States by levels of GER at Upper Primary and Secondary Levels of Education

	Upper Primary		Secondary	
	Below National Average (62.1)	Above National Average	Below National Average (19.3)	Above National Average
1990-91	Karnataka, Madhya Pradesh, Orissa, Andhra Pradesh, Assam, Rajasthan, Uttar Pradesh, Bihar	Kerala, Himachal Pradesh, Tamil Nadu, West Bengal Maharashtra, Punjab, Haryana, Gujarat, Jammu & Kashmir	Bihar	H. P, A P, Kerala, Punjab, T. N., Maharashtra, Gujarat, Karnataka, Haryana, West Bengal, J & K, U. P., Rajasthan, Assam, M. P, Orissa
Total	8	9	16	1
	Below National Average (62.4)	Above National Average	Below National Average (38.9)	Above National Average
2003-04	Rajasthan, Punjab, Orissa, Jammu & Kashmir, Uttar Pradesh, Bihar	Tamil Nadu, H.P., Kerala, Maharashtra, Karnataka, Gujarat, Haryana, A.P., West Bengal, Assam, M. P.	Uttar Pradesh, Madhya Pradesh, Orissa, West Bengal, Rajasthan, J & K, Bihar	Himachal Pradesh, Tamil Nadu, Maharashtra, Kerala, Haryana, Andhra Pradesh, Karnataka, Assam, Gujarat, Punjab
Total	6	11	10	7



Source: Based on Appendix Table A2

During 1990-91, there were eight states below national average, while in 2003-04, the situation has improved that there were only six states below the national average at upper primary level. Three states, namely Uttar Pradesh, Bihar and Orissa maintained their position during both periods unlike many traditionally poor performing states like Madhya Pradesh, Andhra Pradesh, Assam, Rajasthan, Karnataka which moved ahead to become better than the average performers. There were nine states in the above national average category during 1990-91, which have improved to 11 states by 2003-04. Among them, eight states retained their level in 2003-04 as well except the terror prone Jammu and Kashmir. Hence, the three new entrants to the above national average category were Karnataka, Assam and Madhya Pradesh. Karnataka is doing better than earlier mainly because of the state policy and interest towards education in general and secondary and higher education on account of the IT boom in the state. While Madhya Pradesh has been doing better in the recent decade may be by adopting easier cost-saving options such as EGS and Para teachers etc (Panchamukhi, 2005). Even Assam is performing better in the latest decade (Chattopadhyay, 2005).

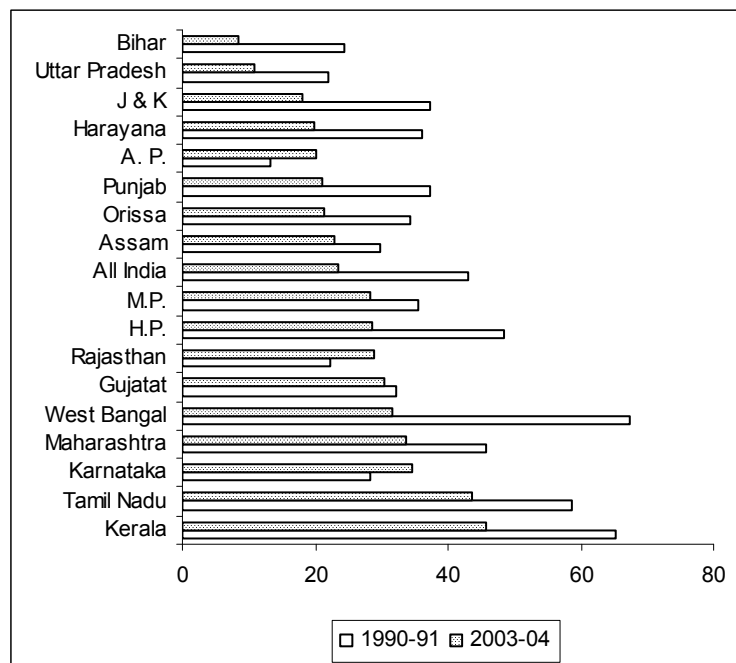
The GER at secondary level in 1990-91 was 19.3 at the all India level highlights some glaring facts. All major states except Bihar performed better than the national average. Ironically, the least GER at secondary level in Bihar (11.7%) pulled down the national GER to 19.3%. If Bihar is not included, the rest of the 16 states average would have been 30 per cent even in 1990-91 itself. However, in 2003-04 among the 16 states, only ten states could maintain their GER above national average. As many as 7 states including Bihar and the usual disclaimers of poor performers like Uttar Pradesh, Orissa, West Bengal and Jammu and Kashmir occupy the below average category in addition to the recently better performing Rajasthan and Madhya Pradesh.

Even though Rajasthan and Madhya Pradesh are doing better at elementary levels of education (Ray, 2005 and Panchamukhi,2005), they are yet to concentrate on their secondary levels of education. Indeed, in 1978 itself while preparing the sixth five year plan, the Planning Commission identified Bihar, Uttar Pradesh, Andhra Pradesh, Assam, Jammu and Kashmir, Madhya Pradesh, Orissa, Rajasthan and West Bengal as the educationally backward states. Recently, Mehrotra, (2005) examined the elementary education scenario in all these states except Orissa and Jammu and Kashmir. Even the twelfth Finance Commission has also awarded special grants for these educationally backward states, namely Assam, Bihar, Jharkhand, Madhya

Pradesh, Orissa, Rajasthan, Uttar Pradesh and West Bengal (GoI, 2004). These states are time and again found to be poor performers. This clearly suggests that a straight-jacket approach for all states do not seem to work. Hence warrant for specific strategies to attain universal elementary education in these states and also better secondary education development if universalising secondary education is on the agenda.

States that perform better at elementary level of education may not necessarily do well at secondary level. Further, linking the gross enrolment ratio at upper primary to that of secondary levels of education would bring additional insights. Transition rates<sup>vii</sup> would be the better indicator to tell about how many or what percent of students transit from upper primary to secondary levels of education. The transition rates would indicate the percent of students joining from one level to the next level out of the total passing out students. Hence, it may not depict the macro picture relating to the relevant age group population. So, the gap between the Gross Enrolment Ratios at upper primary and secondary levels would reveal some additional insights (see Chart 6).

**Chart 6**  
Gap between the GER in Upper Primary and GER in Secondary Levels of Education across Major States in India at Selected Points of Time



Source: Education in India, Vol 1(s)1990-91 and Selected Educational Statistics 2003-04

Highest gap that is above national average of 42.9 percentage points, between upper primary and secondary gross enrolment ratios found in better performing state like Kerala, Tamil Nadu,

Himachal Pradesh and Maharashtra except West Bengal. On the contrary, below national average states show lesser gap in states that were either poor or medium performers like Punjab, Jammu & Kashmir, Haryana, Madhya Pradesh, Orissa, Gujarat, Assam, Karnataka, Bihar, Rajasthan, Uttar Pradesh, and Andhra Pradesh in 1990-91.

During 2003-04 the overall gap has drastically declined from 42.9 to 23.5 percent points. This clearly indicates improvement at the secondary enrolment. Indeed there is great demand and expansion of secondary education during this period. Again almost all the states where gap was higher than the national average in 1990-91 were also here in 2003-04 i.e, Kerala, Tamil Nadu Maharashtra, Himachal Pradesh and West Bengal. Besides these states, few other medium and poor performers having low gap during 1990-91 like Karnataka, Gujarat, Rajasthan and Madhya Pradesh were new entrants for high gap between the gross enrolment ratios of upper primary and secondary during 2003-04. The states with less gap are the same states as in 1990-91 as well like Assam, Orissa, Punjab, Andhra Pradesh, Haryana, Jammu & Kashmir, Uttar Pradesh and Bihar.

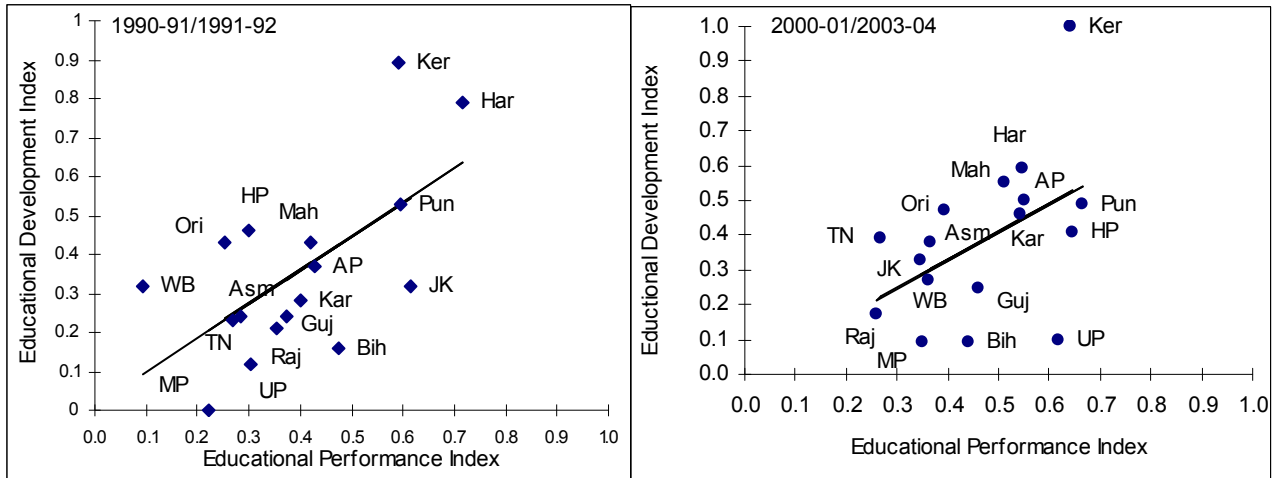
During the period 1990-91 to 2003-04, the gap between the GER in upper primary and secondary level has reduced rather drastically across states except in three states, Karnataka, Rajasthan and Andhra Pradesh. However, in another three states, Madhya Pradesh, Assam and Gujarat, the narrow down of the gap was minimal during the same period. While in all other states, the reduction in the gap was in double digits. This clearly suggest for the increased social demand for secondary levels of education across states irrespective of their levels of educational and economic development. It is the prospect for the secondary education development. It is also a problem if we look at the low gross enrolments ratios vis-à-vis the developed and some of the developing nations. In addition, the better performers at the upper primary level do not necessarily show better transition to secondary levels of education (see Table 1 and chart 1).

***Educational Development Vs. Performance Indices:***

Some interesting observations can be highlighted by looking at the distribution of states by different performance levels at two points of time. Strong linear relationship between the two indices indicate development or growth and performance need to go hand in hand. There is a cluster of states with low educational performance index (largely the Hindi belt states – Madhya Pradesh, Bihar, Uttar Pradesh and Rajasthan), which are also at the bottom of educational development index. At the other end of the scale is an outlier with an exceptional performance is Kerala. The rest of the states are bunched in the middle of these scores. The same set of states and pattern was identified by regressing the human development index on institutional

performance index and also gender development index on institutional performance index (see Mayer, 2001).

Chart 6 and 7: Educational Development and Performance Indices in 1990-91/1991-92 and 2000-01/2003-04



For the period 1990-91/1991-92

$$\text{Educational Development Index} = 0.013 + 0.86 \text{ Educational Performance Index}; R^2 = 0.35$$

(0.114) (3.10)\*

\* t- statistics statistically significant at 99 per cent level.

For the period 2000-01/2003-04

$$\text{Educational Development Index} = 0.005 + 0.81 \text{ Educational Performance Index}; R^2 = 0.174$$

(0.030) (2.09)\*\*

\*\* t- statistics statistically significant at 95 per cent level.

Although, this middle group is roughly aligned along the regression line, a group of six states, Haryana, Maharashtra, Andhra Pradesh, Punjab, Himachal Pradesh and Karnataka achieve noticeably higher scores on both indices especially during 2003-04. The pattern is almost the same in 1990s except the group of six states, which impoverished their secondary development performance during this period except Punjab. Even though Punjab noticeably achieved better scores in 1990-91 however could not yet reach to still higher levels that of Kerala. Indeed, a wide gulf separates the development and performance achieved by Kerala and other states, is starkly evident in the scatter gram during both the points of time. The poor scores of the Hindi-belt states is also equally obvious. However, they improved marginally over their previous achievement levels. Yet, Bihar stands at the bottom of the table in every sphere. Bihar needs special attention, and more than higher financial outlay, it is of a different approach that is necessary to bring about at least a minimal improvement over the next decade

### **Factors Responsible for Low Performance:**

Number of studies have examined the issue of the crucial factors which determine drop-out at the elementary level and identified poverty and quality of schooling as the two most significant factors to be addressed in arresting drop-outs (Visaria *et al*, 1993; Minhas, 1992; Tilak, 1996, 2006; PROBE, 1999; Ramachandran and Saihjee, 2002; Rani, 2003). However, different sets of factors operate besides poverty and quality of schooling. Multiple numbers of factors operate, which may be broadly classified as demand side or family related; supply side or school related factors besides the state policies and practices. While some of the academic factors push the students out, the socio-economic reasons pull them out not to be in the system.

On the *demand side*, poor socio-economic condition of students and costs of education are a major factors. *Direct costs*, including fees are a strong disincentive to sending girls and poor children to school. Even when education is free, there are both direct and opportunity costs which are very real. Cost of books, uniform, mid-day meals, etc. are major costs for poor families. The higher opportunity costs of labor to poor families mean they are not without cost to the family. Children of secondary school age are regularly needed to work on family farms (i.e., in conflict with school attendance). As a result of these high opportunity costs, school attendance and, therefore, school performance tend to be much lower for children from poor families. Even though tuition fees are nominal other fees and out-of-pocket expenditure and opportunity cost of secondary education is higher for the socially deprived children and girls.

Simply put, students invest time, forgo earnings, and endure stress to attend school, but only if anticipated gains from doing so are large enough to offset these costs. For high school students, an investment decision involves weighing expected rewards from obtaining a degree to effort required in getting it. Those who dropout drop out because they detest school, lack motivation, or anticipate little reward from graduation. Mismatch between secondary education and the labour market act as disincentive for their participation. In addition, age of the children acts in a deterrent way, adding to drop-out and low performance. With increasing age, students start taking independent decisions, including the decision to drop out and earn a livelihood. Indeed, the opportunity cost of education for students belonging to low socio-economic background increases with age. The family, instead of supporting the child, needs the child's support. Therefore, families prefer to withdraw the child from the school once he/she crosses the age of ten years. Over-age also acts as a negative factor for girls from poor socio-economic background. Social customs and early marriages also act as obstruction for girls to continue in secondary schools.

Once married, continuing in school is more or less unlikely. Similarly, lack of separate girls' schools and toilets also contributes to drop-out of girls before reaching higher classes as schools or higher education facilities not available conveniently and most importantly safely.

Education not considered useful is an important reasons for many children as reported by the NSSO (1998), which could be interpreted that it is because the schools are not able to attract and retain the children in schools. This points to the inefficiencies of the supply or system or institutional factors.

Supply-side factors can be discussed at three levels at the public policy or macro level, system level and at the institutional level. Macro level factors would include shortage of places and poor and inadequate provision physical infrastructure (viz, school places, the remoteness of rural schools and poor physical infrastructure). Not having a school within easy reach of home is often a barrier to children's enrolment and retention, especially for girls in rural areas. Closely related to this physical proximity is the question of quality of school education, which is influenced at both the system and institutional level. Poor functioning of schools also matter to a greater extent in the levels of not only in participation but also in performance. System level factors include the governance dimension such as, incentives and penalty to influence the performance of the schools, school governance, management mechanism and structures including supervision and inspection; ineffective or no teacher accountability, etc.

Within institutional level, the academic factors on the one hand and leadership and cordial environment on the other hand influence the performance. It includes academic oriented approach and also good institutional leadership, good interpersonal relationship among headmaster, staff and students and team-work, etc. All of these factors need to operate together for better performance. On the contrary, factors like inability to cope with or failure in studies; unfriendly atmosphere; poor quality of teaching; forced private tuition on account of the poor quality of teaching in the school; irrelevant and obsolete design of curriculum; etc adversely impinge on both the participation and performance.

Indeed, the poor quality and competency levels of elementary education result in a cumulative effect, which is being tested only at the secondary level through the state-wide or nation-wide examinations in India. As most of the states follow the non-detention policy at primary stage, a

large number of students get promoted to the next stage. Because of this policy, schools have to promote all the students to the next class based on the attendance, without considering the competency levels. This, in turn, gets reflected in very low completion and success rates. Effectiveness of the secondary education system to a greater extent depends upon improving the quality of elementary education. It is important to raise the quality of education at the elementary level as well. Simultaneous quality improvement programmes both at elementary and secondary level is required. Indeed, achieving universal elementary education needs to be viewed in terms of not mere achievement in quantitative targets but with a good quality education.

## Reference:

- Bregman J (2003), "Summary of Secondary Education (SE) reform trends in OECD countries with an African perspective" paper Presented at the first Regional Secondary Education in Africa (SEIA) Conference in Uganda, June 9-13, 2003.
- Chakravarty, G and S.P. Pal (1994), Human Development Profile of Indian States, Working Paper No. 42, National Council of Applied Economic Research, New Delhi.
- Chattopadhyay, R. (2005), "Assam: The Challenge of Financing Universal elementary Education in a Poor State" in Santosh Mehrotra, (ed) (2005), *The Economics of Elementary Education in India: The Challenge of Public Finance, Private Provision and Household Costs*, Sage, New Delhi.
- Duraisamy, P. (2002), "Changes in Returns to education in India, 1983-94: by gender, age-cohort and location", *Economics of Education Review*, Volume 21, Number 6, December 2002, pp. 609-622(14)
- Government of Assam, (2003), Assam Human Development Report 2003, Planning and Development Department, Guwahati.
- Government of Himachal Pradesh, (2002), Himachal Pradesh Human Development Report 2002, Planning Department, Shimla.
- Government of India (1950), *The Report of the University Education Commission* (December 1948 – August 1949) (reprinted in 1983, p.55), Ministry of Education and Culture, Government of India, New Delhi.
- Government of India (1966), *Report of the Education Commission 1964-66: Education and National Development*, Ministry of Education, Government of India, New Delhi.
- Government of India / MHRD (1986), National Policy on Education, Ministry of Education, Government of India, New Delhi.
- Government of India, (2002), National Human Development Report 2002, Planning Commission, New Delhi.
- Government of India, (2004), Report of Twelfth Finance Commission, Finance Commission, Ministry of Finance, New Delhi.
- Government of India, (2005), *Report of the Council of Advisory Board on Education (CABE) Committee on Universalizing Secondary Education*, Available at [www.education.nic](http://www.education.nic)
- Government of Karnataka, (1999), Karnataka Human Development Report 1999, Department of Planning, Bangalore.
- Government of Madhya Pradesh, (1995, 1998, 2002), *The Madhya Pradesh Human Development Report, 1995*, Directorate of Institutional Finance, Bhopal.
- Government of Maharashtra, (2002), Human Development Report Maharashtra 2002, Government Central Press, Mumbai.



- Government of Nagaland, (2004), Nagaland Human Development Report 2004, Department of Planning and Corodnation, Kohima.
- Government of Orissa, (2004), Human Development Report Orissa 2004, Planning and Coordination Department, Bhubaneswar.
- Government of Punjab, (2004), Human Development Report 2004 Punjab, Economic and Statistical Organization, Department of Planning, Chandigarh.
- Government of Rajasthan, (2002), Rajasthan Human Development Report 2002, Government of Rajasthan, Jaipur.
- Government of Sikkim, (2001), Sikkim Human Development Report 2001, Social Science Press, Delhi.
- Government of Tamil Nadu, (2003), Tamil Nadu Human Development Report 2003, Social Science Press, Chennai.
- Government of West Bengal, (2004), West Bengal Human Development Report 2004, Development and Planning Department, Kolkatta.
- Lewin, K and F. Caillods (2001), Financing Secondary Education in Developing Countries: Strategies for Sustainable Growth, UNESCO, International Institute for Educational Planning, France.
- Maclean, R. (2001), "Overview: Secondary Education at the Cross Roads", *Prospects*, Vol:31, No.1, pp.39-45.
- Malgavkar, P.D. (1994), Human Development in India States, *mimeo*, Centre for Policy Research, New Delhi.
- Mehrotra, S. (2005), *The Economics of Elementary Education in India: The Challenge of Public Finance, Private Provision and Household Costs*, (ed) Sage, New Delhi.
- Mayer, P. (2001), "Human Development and Civic Community in India: Making Democracy Perform", *Economic and Political Weekly*, Vol, 36, No 8, pp.684-692.
- Mingat, Alain, and Jee-Peng Tan. 1996. "The Full Social Returns to Education: Estimates Based on Countries' Economic Growth Performance." Working Paper. The World Bank, Washington, D.C.
- Minhas, B.H. (1992), Educational Deprivation and its Role as a Spoiler of Access to Better Life in India in Amlan Datta and M.M.Agarwal (ed), *The Quality of Life*, Indian Institute of Advanced Study, Shimla, B.R. Publishing Company, Delhi.
- MHRD, Higher Secondary Examinations, MHRD, Department of Education, Planning, Monitoring and Statistical Division, New Delhi, various issues.
- NCAER, (1999), India Human Development Report, Oxford University Press, New Delhi.
- NCAER, (2001), South India Human Development Report, National Council of Applied Economic Research, New Delhi.

- NCAER, (2002), West and Central India Human Development Report, National Council of Applied Economic Research, New Delhi.
- NCAER, (2003), North India Human Development Report, National Council of Applied Economic Research, New Delhi.
- NCAER, (2004), East India Human Development Report, National Council of Applied Economic Research, New Delhi.
- NSSO (1998), *Attending an Educational Institution in India: Its Level, Nature and Cost*, NSS 52<sup>nd</sup> Round, July 1995-June 1996, NSSO, Government of India.
- Panchamukhi, P.R.(2005), “Universalizing Elementary Education in Madhya Pradesh: Can the Successes of Decentralized Governance Offset the Problems of Public Finance, Private Provision and Private Cost?” in Santosh Mehrotra, (ed) (2005), *The Economics of Elementary Education in India: The Challenge of Public Finance, Private Provision and Household Costs*, Sage, New Delhi.
- Prabhu K.S.(1992), Regional Dimensions of Human Development in India, *mimeo* University of Bombay, Mumbai.
- PROBE (1999), *Public Report on Basic Education in India*, Oxford University Press, New Delhi.
- Rani, G. (1999), “Human Development Index in India: A District Profile”, *Artha Vijnana* Vol.16, No.1, pp.9-30.
- Rani, G. (2003), “Education in India across Households by Income Groups”, *Indian Journal of Social Development*, Vol.3, No.2, pp.201-227.
- Ramachandran,V and A. Saihjee, (2002), “The New Segregation: Gender and Equity in Primary Education”, *Economic and Political Weekly*, Vol. 37, No.17, pp.1600-1613.
- Ray, S. (2005), “The Cost and Financing of Universalizing Elementary Education: A Silver Lining in Rajasthan?” in Santosh Mehrotra, (ed) (2005), *The Economics of Elementary Education in India: The Challenge of Public Finance, Private Provision and Household Costs*, Sage, New Delhi
- Shiva Kumar, A.K. (1991), “Human Development Index for Indian States”, *Economic and Political Weekly*, vol. 26, pp.243-45.
- Tilak, J.B.G. (1979), “Interstate Disparities in Educational Development in India” *Eastern Economist*, Vol.73, No.3, pp.140-46.
- Tilak, J.B.G. (1999), “Investment in Human Capital in India: An Inter-State Analysis of Stock and Flow of Human Capital”, *Journal of Indian School of Political Economy*, Vol.XI, No.1, pp.39-75.
- Tilak, J.B.G. (1989), “Education and its Relation to Economic Growth, Poverty and Income Distribution: Past Evidence and Further Analysis”, World Bank Discussion Paper No.3, World Bank, Washington, D.C.

- Tilak, J.B.G. (1996), "How Free is 'Free' Primary Education in India?" , *Economic and Political Weekly*, Vol.31, No.(5&6), pp.275-82, 355-66.
- Tilak, J.B.G. (2001), *Building Human Capital: What Others Can Learn*, World Bank Institute Working Paper, World Bank, Washington, D.C.
- Tilak, J.B.G. (2005), Post-Elementary Education, Poverty and Development in India, Working Paper Series, No.6, Centre of African Studies, University of Edinburgh, U.K.
- Tilak, J.B.G. (2006), "Education: A Saga of Spectacular Achievements and Conspicuous Failures" in *India Social Development Report*, Oxford University Press, Council for Social Development, New Delhi.
- UNDP, *Human Development Reports*, Oxford University Press, Various years.
- UNESCO (2000), *World Education Report 2000*, UNESCO, Paris.
- UNESCO (2006), *Global Monitoring Report: Adult Literacy*, UNESCO Paris.
- Visraria, P. A.Gumber and L.Visaria, (1993), "Literacy and Primary Education in India, 1980-81 to 1991: Differentials and Determinants", *Journal of Educational Planning and Administration*, Vol.7, No.1, 13-62.
- Vyasula.V and B.P. Vani, (1997), "Development and Deprivation in Karnataka: A District Level Study", *Economic and Political Weekly*, Vol. 32, No 46, pp.2970-2975.
- World Bank (1993), *East Asian Miracle, Economic Growth and Public Policy*, Washington, D.C.
- World Bank (2003) *Secondary Education in India*, Report No.2, Discussion Paper, South Asia Human Development Sector, Washington, DC.

**Annexure**

Table A1: Secondary Education Development Index across Major States in India

	1990-91		2003-04		1990-91		2003-04	
	Secondary	Rank	Secondary	Rank	Hr. Sec	Rank	Hr. Sec	Rank
Andhra Prade	0.37	7	0.5	4	0.15	15	0.79	3
Assam	0.24	11	0.38	10	0.16	13	0.28	13
Bihar	0.16	15	0.09	17	0.05	16	0.01	17
Gujatat	0.24	12	0.25	13	0.55	3	0.25	15
Harayana	0.79	2	0.59	2	0.40	8	0.52	5
Himachal P	0.46	4	0.41	8	0.51	5	0.86	1
Jammu & K	0.32	8	0.33	11	0.42	7	0.34	12
Karnataka	0.28	10	0.46	7	0.34	9	0.35	11
Kerala	0.89	1	1.00	1	0.15	14	0.85	2
Madhya P	0.001	17	0.09	16	0.27	11	0.11	16
Maharashtra	0.43	5	0.55	3	0.70	2	0.38	9
Orissa	0.43	6	0.47	6	0.01	17	0.40	8
Punjab	0.53	3	0.49	5	0.53	4	0.69	4
Rajasthan	0.21	14	0.17	14	0.34	10	0.37	10
Tamil Nadu	0.23	13	0.39	9	0.72	1	0.28	14
Uttar Pradesh	0.12	16	0.10	15	0.50	6	0.42	7
West Bangal	0.32	9	0.27	12	0.26	12	0.44	6

Source: Calculated

Table A2: Gross Enrolment Ratios at Upper Primary and Secondary Education in India

States	1990-91		2003-04	
	Upper Primary (11-14 years)	Secondary (14-18 years)	Upper Primary (11-14 years)	Secondary (14-18 years)
Andhra Pradesh	54.0	40.8	64.9	44.6
Assam	52.4	22.7	63.7	40.8
Bihar	36.2	11.7	25.3	16.9
Gujatat	64.4	32.1	70.4	40.0
Harayana	65.2	29.0	65.5	45.5
Himachal Pradesh	96.7	48.3	98.2	69.8
Jammu & Kashmir	62.4	25.2	50.6	32.6
Karnataka	58.2	29.8	76.2	41.7
Kerala	105.4	40.1	93.6	48.0
Madhya Pradesh	57.0	21.5	63.3	34.9
Maharashtra	78.6	32.8	87.6	53.9
Orissa	54.6	20.2	54.0	32.7
Punjab	74.7	37.4	60.1	39.0
Rajasthan	45.5	23.2	61.5	32.6
Tamil Nadu	95.8	37.0	100.4	56.9
Uttar Pradesh	45.5	23.6	48.6	37.9
West Bangal	94.7	27.3	64.3	32.6
All India	62.1	19.3	62.4	38.9

Source: Education in India, Vol 1(s)1990-91 and Selected Educational Statistics 2003-04

Table A3: Performance Index and its Components across Major States in India in 1990-91

	Transition Rates	drop-out Rates	% Appeared in Enrolled	% Passed in Appeared	Performance Index	Rank
Andhra p	98.43	77.28	72.38	34.75	0.43	6
Assam	77.53	76.63	69.88	33.57	0.29	13
Bihar	80.20	84.96	60.02	74.38	0.47	5
Gujarat	81.67	70.89	52.81	49.65	0.37	9
Haryana	82.88	56.82	84.93	73.79	0.72	1
Himachal	72.90	46.81	39.52	36.05	0.30	12
Jam&Kas	101.32	67.12	98.15	38.02	0.61	2
Karnatak	86.83	72.1	61.36	44.77	0.40	8
Kerala	83.19	33.14	53.13	53.75	0.59	4
Madhya p	60.89	76.38	51.20	51.37	0.22	16
Maharash	91.64	67.91	60.19	40.74	0.42	7
Orissa	85.58	75.36	33.20	42.25	0.25	15
Punjab	87.50	53.13	61.38	60.67	0.59	3
Rajastha	91.38	84.78	61.65	42.05	0.35	10
Tamil na	66.03	67.94	32.50	58.78	0.27	14
Uttar pr	70.15	84.33	78.83	44.17	0.30	11
West ben	62.11	74.73	35.09	37.86	0.09	17

Table A4: Performance Index and its Components across Major States in India in 2000-01

	Transition Rate	drop-out Rate	% Appeared in Enrolled	% Passed in Appeared	Performance Index	Rank
Andhra p	91.6	76.98	70.46	57.19	0.55	5
Assam	83.8	75.74	58.00	38.27	0.37	12
Bihar	83.45	81.3	55.95	63.90	0.44	10
Gujarat	80.26	72.22	58.22	61.97	0.46	9
Haryana	74.17	36.51	54.28	62.22	0.55	6
Himachal	73.93	36.18	65.16	72.93	0.65	2
Jam&Kas	90.4	54.68	43.44	21.76	0.35	15
Karnatak	90.2	63.18	39.70	80.34	0.54	7
Kerala	84.54	19.15	53.44	55.03	0.64	3
Madhya p	60.73	69.96	80.14	35.74	0.35	14
Maharash	88.9	55.55	54.27	50.78	0.51	8
Orissa	83.5	75.05	57.68	44.47	0.39	11
Punjab	83.6	39.67	71.06	59.99	0.66	1
Rajasthan	62.9	77.07	47.16	55.99	0.26	17
Tamil na	53.74	58.4	44.47	56.96	0.27	16
Uttar pr	95.5	62.11	90.76	30.36	0.62	4
West ben	75.6	82.58	44.39	70.35	0.36	13

Source: Based on Education in India, Selected Educational Statistics, Results of High School and Higher Secondary Examinations, various issues

## End Notes

---

<sup>i</sup> As quoted in UNESCO (2000)

<sup>ii</sup> See Lewin and Caillods (2001) for a study of financing secondary education in developing countries. However, this study does not include India.

<sup>iii</sup> Sopher' Index(SI) is defined as  $SI = \log(LIT_m/LIT_f) + \log[(Q-LIT_f)/Q-LIT_m]$ ,

Where  $LIT_m \geq LIT_f$ ,  $LIT_m$  - male literacy rates,  $LIT_f$  - female literacy rates and  $Q = 100$  (Tilak,1999).

<sup>iv</sup> In the absence of information to work out either net or age-specific enrolment ratios, gross enrolment ratio is widely used albeit with inherent deficiency.

<sup>v</sup> Drop-out rates is estimated as the percentage of pupils who drop out from a given grade or cycle or level of education in a given cycle / school year. The formula for estimating the drop out is given as: Gross Dropout rate for classes I to V =  $\{1-(\text{Enrolment in class V during 2001-2002}/\text{enrolment in class I during 1997-1998})\} * 100$ .

<sup>vi</sup> Secondary Boards in High (consisting of class 9 and 10) and Higher Secondary (class 11 and 12) Education exist in almost all states of India, totalling 32 such Boards, including National Institute of Open Learning. They conduct state-wide and nation-wide (All these boards conduct nation / state-wide examinations) examinations at high and higher secondary levels.

<sup>vii</sup> Transition rates are the ideal indicator to examine the internal efficiency of the schools and discussed in the next section.